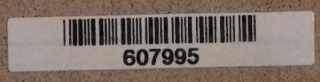
University of London


607995

REPORTS

FROM

COMMITTEES:

SEVEN VOLUMES.

—*(4.)*—

METROPOLIS GAS (SURREY SIDE) BILL;
METROPOLITAN FIRE BRIGADE.

Session

8 *February* ——15 *August* 1876.

VOL. XI.

1876.

REPORTS FROM COMMITTEES:

1876.

SEVEN VOLUMES:—CONTENTS OF THE

FOURTH VOLUME.

N.B.—*THE* Figures *at the* beginning of the line, *correspond with the* N° *at the foot of each* Report; *and the* Figures *at the* end of the line, *refer to the* MS. Paging *of the Volumes arranged for The House of Commons.*

METROPOLIS GAS (SURREY SIDE) BILL.

384. Report from the Select Committee on the Metropolis Gas (Surrey Side) Bill; together with the Proceedings of the Committee, and Minutes of Evidence - - - - - - - - p. 1

METROPOLITAN FIRE BRIGADE:

371. Report from the Select Committee on Metropolitan Fire Brigade; together with the Proceedings of the Committee, Minutes of Evidence, Appendix, and Index - - - - - - - 53

REPORTS FROM COMMITTEES:

1876.

INDEX NUMBERED:—CONTENTS OF THE

FOURTH VOLUME.

REPORT

FROM THE

SELECT COMMITTEE

ON THE

METROPOLIS GAS (SURREY SIDE) BILL;

TOGETHER WITH THE

PROCEEDINGS OF THE COMMITTEE,

AND

MINUTES OF EVIDENCE.

Ordered, by The House of Commons, *to be Printed,*
28 *July* 1876.

384.

REPORT - - - - - - - - - - - p. v

PROCEEDINGS OF THE COMMITTEE - - - - p. vi

MINUTES OF EVIDENCE - - - - - - - - p. 1

Wednesday, 12*th July* 1876.

Ordered, That the Metropolis Gas (Surrey Side) Bill be read a second time, and committed to a Select Committee of Five Members, Three to be nominated by the House, and Two to be nominated by the Committee of Selection.

Ordered, That all Petitions presented against the Bill be referred to the Select Committee on the Bill, provided such Petitions are presented one clear day before the meeting of the Committee; and that such of the Petitioners as pray to be heard, by themselves, their Counsel, or Agents, be heard upon their Petitions, if they think fit, and Counsel heard in favour of the Bill against the said Petitions.

Ordered, That the Committee have power to send for Persons, Papers, and Records.

Ordered, That Three be the Quorum of the Committee.

Friday, 14*th July* 1876.

Ordered, That the Petitions against the Bill from the Metropolitan Board of Works and Crystal Palace District Gas Company be referred to the Committee.

Monday, 17*th July* 1876.

Ordered, That the Petitions against the Bill from the South Metropolitan Gaslight Company and the Phœnix Gaslight and Coke Company be referred to the Committee.

Committee nominated of—

Mr. Garnier.
Mr. Goulding.
Mr. Stevenson.

Ordered, That the Minutes of Evidence taken before the Committee on the Metropolis Gas Companies Bill, the Commercial Gas Company's Bill, and the Imperial Gas Company's Bill, in 1875, be referred to the Committee on the Metropolis Gas (Surrey Side) Bill of the present Session.

COMMITTEE OF SELECTION

Monday, 17*th July* 1876.

Members added by the Committee of Selection—

Mr. W. E. Forster. | Mr. Tremayne.

COMMITTEE OF SELECTION.

Wednesday, 19*th July* 1876.

Ordered, THAT Mr. *Tremayne* be discharged from further attendance on the Committee.

Ordered, THAT Mr. *Richard Bright* (Somerset) be added to the Committee.

Thursday, 20*th July* 1876.

Ordered, THAT the persons appearing before the Select Committee on the Metropolis Gas (Surrey Side) Bill have leave to print the Minutes of the Evidence taken before the Committee, day by day, from the Committee Clerk's copy, if they think fit.

Ordered, THAT the Minutes of Evidence taken before the Committee on the South Metropolitan Gaslight and Coke Bill of the present Session be referred to the Committee on the Metropolis Gas (Surrey Side) Bill.

Thursday, 27*th July* 1876.

Ordered, THAT Mr. *Goulding* be discharged from further attendance on the Committee.

Ordered, THAT Mr. *Onslow* be added to the Committee.

REPORT.

THE SELECT COMMITTEE to whom the METROPOLIS GAS (SURREY SIDE) BILL was referred, having proceeded to examine the allegations of the Bill, were informed that it was not intended to proceed with the same; they have therefore agreed to report the said Bill without Amendment, together with the Minutes of Evidence taken before them, to the House.

28 *July* 1876.

PROCEEDINGS OF THE COMMITTEE.

Wednesday, 19*th July* 1876.

MEMBERS PRESENT:

Mr. Garnier.	Mr. W. E. Forster.
Mr. Goulding.	Mr. Tremayne.
Mr. Stevenson.	

Mr. W. E. FORSTER was called to the Chair.

The Committee deliberated.

METROPOLIS GAS (SURREY SIDE) BILL).

Preamble read the first time.

Counsel:—Mr. Clerk, Q. C., Mr. Littler, Q.C., and Mr. Broughton.
Agent:—Messrs. Wyatt & Co.

The following Petitions against the Bill were read, from—

1. Metropolitan Board of Works.
   Counsel:—Mr. Cripps, Q.C., and Mr. O'Hara.
   Agent:—Messrs. Dyson & Co.

2. Crystal Palace District Gas Company.
   Agent:—Messrs. Sherwood & Co.

3. South Metropolitan Gaslight Company.
   Counsel:—Mr. Venables, Q.C., and Mr. Richards.
   Agent:—Messrs. Dyson & Co.

4. Phœnix Gaslight and Coke Company.
   Counsel:—Mr. Venables, Q.C., and Mr. Richards.
   Agent:—Messrs. Baxter & Co.

5. Vestry of Lambeth.
   Counsel:—Mr. Michael.
   Agent:—Messrs. Simson & Wakeford.

6. Vestry of Camberwell.
   Counsel:—Sir Mordaunt Wells.
   Agent:—Messrs. Simson & Wakeford.

The Committee deliberated.

[Adjourned till Wednesday next, at Twelve 'o clock.

Wednesday, 26*th July* 1876.

MEMBERS PRESENT:

Mr. W. E. FORSTER in the Chair.

Mr. Garnier.	Mr. Richard Bright (Somerset).
Mr. Stevenson.	

Mr. *Clerk* was heard to object to the *locus standi* of the vestries of Camberwell and Lambeth against the Bill, on the ground that they were represented by the Metropolitan Board of Works, who, although nominally Petitioners against the Bill, were in reality joint Promoters of the Bill with the Board of Trade.

Sir

Sir *Mordaunt Wells* and Mr. *Michael* were heard in support of the *locus standi* of the vestries against the Bill.

Mr. *Clerk* was heard in reply.

The Committee determined that the vestries had a *locus standi.*

Sir *Mordaunt Wells* was heard to raise a preliminary objection to the Bill being proceeded with, in consequence of the South Metropolitan Gaslight and Coke Company having been inserted therein without any instruction from the House.

Mr. *Michael* was heard in support of the objection.

Mr. *Clerk,* on behalf of the Promoters of the Bill, was heard against the objection.

The Committee resolved to reserve their decision on the point raised by the Counsel for the Petitioners, and to proceed with the consideration of the Bill.

Mr. *Clerk* was heard to open the case in support of the Preamble of the Bill, and called—

Mr. *Thomas Henry Farrer,* sworn and examined.

At the termination of the examination in chief of the witness, Sir Mordaunt Wells submitted to the Committee that it was important that they should decide the point raised by him, as to whether the South Metropolitan Gaslight and Coke Company could be introduced into the Bill, before the cross-examination was proceeded with.

Mr. *Michael* was also heard.

The Committee determined that they would not stop the consideration of the Bill but at the same time they would give no opinion whatever with regard to the price, either as regards the South Metropolitan alone, or in respect to all the Companies South of the Thames.

[Adjourned till To-morrow, at Twelve o'clock.

Thursday, 27th July 1876.

MEMBERS PRESENT:

Mr. W. E. Forster in the Chair.

Mr. Garnier.	Mr. Richard Bright (Somerset).
Mr. Stevenson.	

Mr. *Thomas Henry Farrer* was further examined.

Room cleared. The Committee deliberated.

Parties called in.

The Chairman suggested whether it would be possible for all parties to agree to the inclusion of the South Metropolitan Gaslight and Coke Company in the Bill, and to the fixing of the initial price at 3 *s.* 6 *d.* instead of 3 *s.* 9 *d.*

Mr. *Clerk,* Sir *Mordaunt Wells,* and Mr. *Venables* were heard with reference to the suggestion, and applied for an adjournment to consider the case.

[Adjourned accordingly till To-morrow, at Eleven o'clock.

Friday, 28th July 1876.

MEMBERS PRESENT:

Mr. W. E. FORSTER in the Chair.

Mr. Garnier.	Mr. Richard Bright (Somerset).
Mr. Stevenson.	Mr. Onslow.

Mr. *Venables*, on behalf of the gas companies, stated that they were unable to agree to the proposed reduction of the price of the gas, and asked the Committee not to proceed further with the Bill.

Mr. *Clerk* stated that the Board of Trade desired to withdraw the Bill.

Mr. *Thomas Henry Farrer* was further examined.

The Committee deliberated, and decided to report the Bill without amendment.

Ordered, To Report, together with the Minutes of Evidence.

MINUTES OF EVIDENCE.

LIST OF WITNESSES.

Wednesday, 26th July 1876. PAGE.

Mr. Thomas Henry Farrer - - - - - - - - 1

Thursday, 27th July 1876.

Mr. Thomas Henry Farrer - - - - - - - - 18

Friday, 28th July 1876.

Mr. Thomas Henry Farrer - - - - - - - - 40

MINUTES OF EVIDENCE.

Wednesday, 26th July 1876.

THE RIGHT HONOURABLE WILLIAM EDWARD FORSTER, IN THE CHAIR.

26 July 1876.

Sir *Mordaunt Wells* objected to the Bill being proceeded with in its present shape, on account of the addition to it of the South Metropolitan Gas Light and Coke Company, and submitted that the Promoters should have brought in a new Bill for this purpose.

Mr. *Michael* was also heard in support of the objection.

Mr. *Clerk* was heard to address the Committee against the objection.

The Committee retired.

After a short time the Committee returned into the Committee-room.

Chairman.] We consider that the argument raised by the counsel for the vestries is no doubt an argument which they have a perfect right to raise; but we think that it is rather premature. What we should call upon the counsel for the Promoters to do would be to follow the usual course, stating their case in favour of the Bill as it was passed on the second reading. If the Promoters intend to suggest alterations, we should expect them to give an argument for those alterations in the opening of the case; but the fact that we hear them upon that matter does not, in the slightest degree, preclude our hearing the opposing counsel upon both points, namely, the point whether we have a right to entertain the alteration; and, secondly, if we have a right to entertain the alteration, hearing the counsel upon the merits of the alteration. Perhaps it will be better to decide the first point first.

Mr. *Michael.*] Sir, before the counsel for the Bill opens the alterations, I think that we have a right to discuss that matter.

Chairman.] At present we have no official knowledge of the alterations. We have nothing told us by the Promoters. We have the Bill put before us with some manuscript by the side of the print. What has been put before us is the printed Bill. We should be inclined to hear counsel in favour of the alterations, without precluding the counsel on the other side from the opposing argument that we have no right to entertain them.

Mr. *Clerk* was heard to open the case of the Promoters of the Bill.

Mr. *Thomas Henry Farrer*, sworn; Examined by Mr. *Broughton.*

Mr. *T. H. Farrer.*

1. You are Permanent Secretary to the Board of Trade?—I am.
2. And you have been so for some years?—For many years.
3. I believe you have paid great attention to the gas question?—Yes. The first occasion on which our attention was specially directed to this subject was about the year 1866 or 1867.

Mr. *T. H. Farrer.*
26 July 1876.

4. The Board of Trade watches the interests of the public in this matter?—From time to time reference is made to the Board of Trade, and applications have been made to them on behalf of the consumers, and consequently they have performed whatever functions any department of the Government performs with respect to this question.

5. In the interests of the consumers?—In the interests of the public, and I am glad that you have put the question. I wish to say that the Board of Trade feel themselves bound in this matter to act fairly as between the consumers and the companies, but as the representation has generally been that the consumers suffer, the Board of Trade have necessarily, to some extent, taken the part of the consumers, but their object has been to act fairly as arbitrators between the companies and the public.

6. The Metropolitan Board of Works, without the City, and the City authorities, the Commissioners of Sewers, within the City, more directly represent the consumers?—They directly represent the consumers.

7. Under recent legislation exclusively?—Yes, under recent legislation exclusively. I think that prior to the year 1860 the vestries had a voice in the matter, but since 1868, and since the time at which the Board of Trade had to do with the matter, the Metropolitan Board of Works and the Corporation of the City of London have had exclusively, under the Acts of Parliament, the protection of the consumers.

8. In the Act of 1860, the vestries are mentioned, I think?—Yes, in the Act of 1860 the vestries are mentioned. In the Interpretation Clause, "Local authorities" are made to mean vestries.

9. Will you have the kindness to read that clause?—This is an Act for better regulating the Supply of Gas to the Metropolis: "In the construction of this Act the following words and expressions have the following meanings, unless excluded by the subject or context (that is to say), the expression 'Gas Company' or 'Gas Companies' means and includes any and every company, and any person or persons supplying gas within the limits of this Act. The expression 'Local authority' includes the Metropolitan Board of Works, vestries, and district boards appointed under an Act of the Session of the eighteenth and nineteenth years of the reign of Her present Majesty, chapter 120, for the Local Management of the Metropolis."

10. Those references to the vestries and district boards are omitted in the Act of 1868, I believe?—I am not aware that they are mentioned in that Act.

11. Have the vestries anything to do with the revision as to the price of gas?—Nothing whatever.

12. I mean this: who appears in the interests of the public, under the revision clauses?—The Metropolitan Board of Works outside the City, and the Corporation of London within the City.

13. The City Act, which was passed as the Chartered Act of 1868, provides for the amalgamation of the Chartered Company with two companies in the City?—Yes.

14. And the Chartered Act of 1871 extends that power of amalgamation to the companies outside the City?—To all the companies within the metropolitan district outside the City.

15. That would include all the companies on the south side of the Thames, as well as those on the north side of the Thames?—Yes.

16. It is the 56th Section?—Yes.

17. When schemes are submitted to the Board of Trade for the amalgamation of the Chartered Company; for instance, with any other company, what bodies have the power to appear in the interest of the public, or of the consumers?—The City Corporation, if the matter concerns the supply of gas within the City, and the Metropolitan Board of Works if it concerns the supply of gas outside the City.

18. The City Corporation have the power to appear under Section 19 of the Act of 1868?—Yes.

19. There is the section (*handing the Act of* 1868 *to the Witness*); will you read it?—This Act relates only to the supply of gas within the City. Clause 19 is this: "The Board of Trade shall give notice in the 'London Gazette,' and by advertisement in two daily morning newspapers, published in London or Middlesex, of the submission of such scheme, and shall cause copies of such notice and scheme to be delivered to the Corporation;" that is the City Corporation;

tion; "and shall receive any representations made to them by the Corporation respecting the scheme, and shall consider the scheme and representations (if any), and may suggest any modifications of the scheme."

20. I think the 109th Section of the Chartered Company's Act, 1868, and of the Gas Light and Coke Company's Act are the same thing; and the 109th Section of the Chartered Company's Act of 1868 is this: "If the Bill, the short title of which when passed is intended to be the City of London Gas Act (in this Act referred to as the City Gas Act), now pending, pass into a law in the present Session, then the company and their undertaking shall be subject to the provisions of the City Gas Act without as well as within the City of London and the liberties thereof, and such Act shall extend to the whole undertaking of the company; and for the purposes of the City Gas Act, in relation to the undertaking of this company beyond the limits of the City of London and the liberties thereof, the Metropolitan Board of Works shall have all the same rights, powers, authorities, and obligations as are given to or imposed upon the mayor, aldermen, and commons of the City of London in the City Gas Act as fully as if that Board had been named in such Act, instead of the said mayor, aldermen, and commons, so far as relates to that part of the undertaking of the company beyond the limits of the City."

21. Then the Chartered Company's Act of 1871, by very nearly the last section, I think it is the 56th section, enables the Chartered Company to amalgamate, and applies those sections of the Act of 1868 to amalgamation with all companies within the metropolitan area; is not that so?—Yes.

22. In all these amalgamations, I believe the Chartered Company must take the initiative; no other company has general powers of amalgamation?—Not that I am aware of.

23. The amalgamation, for instance, between the Commercial and the Ratcliffe Companies took place under a special Act?—Yes.

24. It is a fact that the Chartered Company must take the initiative, is it not?—Yes.

25. That being so, the Chartered Company absorbs the other company, but the other company does not absorb the Chartered?—That is so.

26. In fact, under the special words of the Act the new company, formed out of the two companies that amalgamate, become the Chartered Company?—Yes, the Imperial and the Independent Companies have this last winter become part of the Chartered Company.

27. There is no longer an Imperial Company or an Independent Company?—No.

28. What is the effect with regard to the price and general regulations upon an amalgamation between the Chartered Company and any other company?—That all regulations with regard to price, dividends, illuminating power, purity, and so on, which are in the Acts relating to the Chartered Company, apply to the companies with which they amalgamate.

29. So that if the Chartered Company were to amalgamate with either of the four companies south of the Thames, the price in the district which was taken over would become 3 *s.* 9 *d.*?—I think so.

30. As matters now stand?—Yes. Will you allow me to say that the reason for that is obvious; at the time when this Act of 1868 was passed the Chartered Company was the company which was made subject to the new regulations which Parliament then thought fit to impose; the other companies were not subject to those regulations; and it was thought desirable, if an amalgamation took place, to bring the companies which might amalgamate with the Chartered Company within the provisions applying to the Chartered Company.

31. Can you tell me what are the prices charged by these four companies; the Phœnix, for instance; the actual prices charged at the present time?—I have these prices, which, I believe, are correct; the companies will correct me if I am wrong. The present price of the Phœnix is 3 *s.* 6 *d.*, and the statutory illuminating power is 12 candles; but they give more.

32. Mr. *Michael.*] Do you know what they give?—I should be sorry to pretend to speak with any accuracy upon that point.

33. By the *Committee.*] When you say that the present price of the Phœnix is 3 *s.* 6 *d.*, do you mean the present statutory price of the Phœnix?—No; I mean the actual price.

Mr. *T. H. Farrer.*

26 July 1876.

34. What is the statutory price?—The statutory price is that which was fixed by the Act of 1860; 4 *s.* 6 *d.*, with a power of raising it.

35. Mr. *Broughton.*] All these companies, excepting the South Metropolitan Company, are under the legislation of 1860?—Yes.

36. That being so, the Phœnix is obliged to give 12-candle gas?—The Phœnix is obliged by the Acts which now apply to it to give 12-candle gas. It may raise its price to 4 *s.* 6 *d.* without saying anything to anybody; and it may raise its price to 5 *s.* 6 *d.* by means of an arbitration.

37. By the *Committee.*] With the Revision Clauses?—No; the revision that was provided by the Act of 1870 was a different sort of revision; it was by arbitration.

38. Mr. *Broughton.*] The London Company is also under the Act of 1860, is it not?—Yes; and I believe its position is exactly the same as that of the Phœnix.

39. And its present price is exactly the same—No; I am told that its present price is 3 *s.* 6 *d.*

40. Then the Surrey Consumers?—The Surrey Consumers are in the same statutory position as the Phœnix and the London; its present price is, I am told, 4 *s.*

41. Now, with regard to the South Metropolitan; that is under the Act of 1869?—Yes.

42. Which fixes its maximum price at 3 *s.* 6 *d.*?—Yes, at 3 *s.* 6 *d.*

43. And it has the Revision Clauses?—It has the Revision Clauses of the Act of 1868.

44. By the *Committee.*] Its statutory price being 3 *s.* 6 *d.*, and its statutory illuminating power being what?—Fourteen candles.

45. Mr. *Broughton.*] The sections of the Act referring to that matter are the 39th and 40th and the 41st?—Yes; I think the candle is equivalent to about 2 ½ *d.*

46. Or 3 *d.* for two candles?—Yes.

47. Since the amalgamation of the Imperial and the Independent, andthe Gas Light and Coke Company, this year, I believe you have been negotiating for an amalgamation of the companies south of the Thames?—It happened in this way:—The first thing that took place was a controversy between the Metropolitan Board of Works and the City on the one hand, and the amalgamating companies, to the north of the Thames, on the other, as to the terms to which they should be made subject, as a condition of the amalgamation for which they applied. The Board of Trade acted as arbitrators in the matter; and it was eventually settled that they should accept the legislation which had been applied to the Commercial Company, in the year 1875, with the addition that any new share capital which was raised should be raised by putting up the shares to auction. When that settlement was effected the Board of Trade received intimations (I really do not remember at this moment for which side first) that it might be possible to bring about a similar settlement between the Metropolitan Board of Works and the companies on the south of the river. The companies and the Metropolitan Board of Works met at the Board of Trade, and they came to an agreement upon most of the points; certain points were reserved, and eventually all points were agreed; practically it came to applying to those companies the same legislation as was to be applied to the companies north of the river, with some exception as regards the reserve fund of the Phœnix and of the Surrey Consumers, about which there was a little controversy, but which was ultimately settled to the satisfaction of the Metropolitan Board of Works.

48. And that little difference is represented in the 69th and 70th sections of the present Bill?—Yes.

49. Sir *Mordaunt Wells.*] Will you kindly state the companies with which that arrangement was entered into?—That arrangement was entered into with the Phœnix, the London, and the Surrey Consumers. The South Metropolitan were excluded from that arrangement, because they had a Bill themselves before Parliament.

50. Mr. *Broughton.*] With regard to these amalgamations, I understand that there are two alternatives, either a general amalgamation of the whole of the companies under the Chartered Act, or a separate amalgamation of the companies on the south of the Thames, with the subsequent absorption of the London into the Chartered, and perhaps of the Commercial, so that there would be two companies, one on the north side, and one on the south side of the Thames,

Thames, or one great chartered company; is not that the alternative?—That appears to be the alternative to which we are coming; both those plans have been suggested, and I think it might be convenient if I were just to state in the order of time how that question arose. The South Metropolitan being excluded from that arrangement, their Bill was proceeded with before Mr. Walter's Committee; that Committee decided that the legislation of last year should be applied to the South Metropolitan Company, but in lieu of an initial price of 3 *s.* 9 *d.* they gave an initial price of 3 *s.* 6 *d.* At the same time they expressed a decided opinion in favour of amalgamation, and they inserted in the South Metropolitan Company's Bill a provision, enabling them to amalgamate. They appeared to the Board of Trade to be not entirely self-consistent, because it would be very difficult to find a company which had an initial price of 3 *s.* 9 *d.* ready to amalgamate with one which had an initial price of 3 *s.* 6 *d.*, nor is it very easy to see how such an amalgamation could be effected.

Sir *Mordaunt Wells* stated that a decision had been arrived at by a Committee of this House during the present Session, and objected to by Mr. Farrer, who represented the Board of Trade, reasoning upon that decision.

Chairman (to Mr. *Broughton*).] I think you might put the question in this form. Are you acquainted with any facts bearing upon that decision?

51. Mr. *Broughton.*] Will you be good enough to answer that question?—Yes. Shortly after that decision the Board of Trade received a letter from the Phœnix Company, saying that no amalgamation would be satisfactory which did not comprise——

Sir *Mordaunt Wells.*] Let us have that letter, if you please.

52. Mr. *Broughton.*] What is the date of that letter?—The 23rd of May, I believe.

53. There had been some correspondence before that ——

Chairman.] You need not go into that.

Witness.] On the 3rd of June the Phœnix Gas Light and Coke Company write in these terms: "I am desired by the Board of Directors to acknowledge the receipt of your letter of the 31st ultimo"——

54. Mr. *Michael.*] We must have that letter of the 31st?—I can state in a few words how this letter came.

55. *Chairman.*] Just give us your explanation?—I should explain it in this way: When this arrangement between the Metropolitan Board of Works and the three companies was made, a question arose as to how it should be carried into effect. The Metropolitan Board of Works had a Bill then before Parliament, but it was finally settled that the Board of Trade, acting as arbitrators between the two parties, should introduce the Bill. A copy of that Bill, when it was prepared, was accordingly forwarded to the Metropolitan Board of Works and to the three companies, and the first sentence of this letter relates to that draft Bill.

56. Mr. *Broughton.*] Which was sent in a letter of the 31st of May, I believe?—It was not exactly so; the agent was instructed to communicate the draft Bill to the companies. This letter, which I was about to read, is in these terms: "I am desired by the Board of Directors"——

57. *Chairman.*] That is the letter of the Phœnix Company?—Yes—"to acknowledge the receipt of your letter of the 31st ultimo, stating that you had instructed your Parliamentary agent to forward to this company copy of the draft Bill which the Board of Trade propose to introduce into Parliament for the purpose of regulating the gas supply in the districts of the London, Phœnix, and Surrey Consumers Gas Companies, and requesting the observations of this company thereon; and that the Board of Trade were ready to arrange for a further conference, if so wished, by the companies. In reply, I am to inform you that there are some clauses of the Bill which require amendment, and upon which Messrs. Baxters have received instructions to represent this company; I am however to bring prominently

Mr. *T. H. Farrer.*
26 July 1876.

to the notice of the Board of Trade the firm conviction of the directors that no legislation will be satisfactory or permanent that does not embrace the entire amalgamation, upon equal terms of the four South London Companies, thus including the South Metropolitan. This principle has been so strongly urged from time to time by the Board of Trade that no further argument is needed in support of it, and the provisions in the Bill for a permissive amalgamation, by scheme hereafter, again confirms it. Having regard, therefore, to these facts, and also to the present being a most opportune time to once and for all settle terms as to the southern supply, this company is using every endeavour to bring about such an amalgamation forthwith, and beg that the Board of Trade will consent to further assist in consummating such a scheme by authorising the insertion of the necessary clauses in the present Bill to carry the same into effect, and thus obviate the necessity of re-opening the question at some future time with a repetition, probably, of the costly disputes and controversies. Begging the favour of your consideration hereto as early as may be convenient."

58. Mr. *Broughton.*] Was there any alteration made in the Bill in consequence of that letter?—I think it would be convenient if I were to read the further letters which the Board of Trade received upon this subject.

59. Mr. *Clerk.*] Perhaps you will have the kindness to do so?—There is one letter from the South Metropolitan Company, dated the 7th June, which is in these terms: "Sir,—The directors of this company have received from the Phœnix Gas Company a proposal for amalgamating the four South London Companies on equal terms. They have also received from them a copy of their letter of the 3rd June, addressed to yourself on this subject. They have further been favoured by your courtesy, through Mr. Wyatt, with a copy of the draft Bill, Metropolitan and Gas (Surrey Side), by which they find that the power of amalgamating extends only to the three companies named in that Bill. Under these circumstances the directors feel that it will be of no use their entering into negotiations to promote a general southern amalgamation while the power to effect such an arrangement is withheld; they have therefore instructed me to address this letter to you for the purpose of inquiring whether it is the intention of the Board of Trade to provide facilities for a general amalgamation of the four southern companies." Then from the Surrey Consumers Company we received a letter, dated the 7th June: "Sir,—I am instructed by the directors of this company to acknowledge the receipt of your letter of the 31st May forwarding a copy of the Draft Bill for regulating the gas supply in the districts of the London, Phœnix, and Surrey Consumers Gas Companies, and expressing a wish on the part of the Board of Trade to receive any observations which the directors of this company desire to make on the provisions of that Bill. In reply, I am to say in reference to the Bill, that Mr. Baxter has received instructions from this company to acquaint the Board of Trade with the few alterations, and they are chiefly verbal, which this company desire to have made in the clauses if the Bill proceeds. But meanwhile the directors take this opportunity of acquainting the Board of Trade with the fact that they have received a proposal from the Chartered Gas Company for an immediate amalgamation with that company by consent of the Board of Trade. The directors of this company believe that the true policy first suggested by Mr. Cardwell's Committee in 1868, in the interests of consumers and companies both, is to combine all the metropolitan gas companies into one, and to effect this object the Chartered Company should be encouraged to proceed as they have done to absorb the other companies separately until the whole are combined. The directors have reason to believe that there is no hope, at present at least, of effecting an amalgamation on equal terms of the London, the Phœnix, and the Surrey Consumers Companies. The directors are prepared to show to the Board of Trade, if required to do so, that an amalgamation with the Chartered Gas Company will effectually serve the interests of gas consumers in the district. The first effect will be to lower the price of gas from 4 *s.* to 3 *s.* 9 *d.* per 1,000 feet, and economy in many other respects must follow."

60. By the *Committee.*] From whom is that letter?—From the Surrey Consumers. These letters were all sent to the Metropolitan Board of Works; and the Metropolitan Board of Works, on the 28th of June, wrote this letter to the Board of Trade. "Sir,—I am directed by the Metropolitan Board of Works to inquire when it is probable that the Bill introduced into the House of Commons by

by the President of the Board of Trade, for regulating the London, Phœnix, and Surrey Consumers Gas Companies, will be read a second time. The Board has heard that advantage is being taken of the time occupied by the introduction and progress of the Bill to negotiate amalgamation between the Gas Light and Coke Company and certain companies on the south side of the Thames. The Board is not aware to what extent this rumour is well founded, and would be glad to know whether the Board of Trade has any knowledge of any proposal for such amalgamation. At the same time I am directed to say, that the Board would be strongly opposed to an amalgamation being effected between the Gas Light and Coke Company and the companies on the south side of the Thames, and would hope that no proposal for that purpose would, pending the progress of the Bill above referred to, be entertained by the Board of Trade."

61. Sir *Mordaunt Wells.*] What is the date of that?—The 28th of June. I had better, perhaps, read all that the Metropolitan Board of Works say upon this subject. They write to us another letter on the 7th of July, in which, after speaking upon some other points in the Bill, they say:—"The second point——

62. Sir *Mordaunt Wells.*] What is the date of that?—The 7th of July.

63. By the *Committee.*] That was the opinion of the Metropolitan Board of Works against amalgamation between the Chartered and the South Metropolitan Company?—Their opinion is, I believe, that there ought to be two companies, one on the north side of the Thames and one on the south side.

64. That was their opinion?—Yes, and I was desirous of showing how this question of amalgamation was brought before the Board of Trade after it had been decided, in the first instance, to exclude the South Metropolitan Company entirely from the original Bill. Then in the letter of the 7th of July the Metropolitan Board say, "The second point relates to the power of amalgamation proposed to be given by the 61st clause of the Bill. In the draft Bill submitted to the Board, and returned to the Board of Trade, the power of amalgamation was to extend only to the three companies mentioned in the Bill, but in the 61st clause of the Bill, as laid before the House of Commons, words have been inserted which would enable the three companies to amalgamate with other companies supplying gas south of the River Thames, including the South Metropolitan. It was part of the provisional arrangements made at the interviews between the Board's Parliamentary Committee and the representatives of the gas companies at the office of the Board of Trade, that the South Metropolitan Gas Company should not be included in any provision for amalgamation in the present Bill, and the Board therefore asks that the clause referred to may be restored to the form in which it stood in the original Draft Bill." Then they refer to another point, namely, the Reserve Fund.

65. Mr. *Broughton.*] The next letter is the 10th of July, is it not; have you got that letter?—Yes.

66. Sir *Mordaunt Wells.*] Will you give us the Board of Trade answer?—Yes, you shall have all the correspondence.

67. Will you give us the answer to each letter?—I think you will find that what I am going to state will answer your question. The Board of Trade thereupon suggested, as there were several points to be settled, that the representatives of the Companies and the Metropolitan Board of Works should meet the Board of Trade and discuss these questions.

68. Was that the subject of the letter?—No, that was a meeting. I will come to the letter presently. I am not quite certain whether this proposal was made by letter, or whether it was verbal; at any rate the first substantial step which was taken was to hold a meeting in one of the rooms of the House of Commons on the 10th of July, at which the representatives of the Companies, and the representatives of the Metropolitan Board of Works, Sir James Hogg and others attended.

69. Mr. *Michael.*] What Companies were represented at that meeting?—All four Companies were represented there. The other points that were at issue, namely, the question of the Acquisition of Lands, and the question of the Reserve Funds, were settled. The question of the acquisition of lands, by the Companies agreeing to strike out of the Bill all the provisions relating to that subject, and they are consequently struck out in ink in the copy that has been circulated. The Metropolitan Board of Works, on the other hand, agreed to special provisions with regard to the reserve funds, to which reference has been made, and

Mr. *T. H. Farrer.*

26 July 1876.

there remained the question of amalgamation; and immediately after that meeting the Board of Trade, on that same day, wrote a letter to the Metropolitan Board of Works, which makes it unnecessary for me to state what passed at that meeting any further. That letter is as follows, and is to Sir James Hogg. "Sir,—With reference to the conversation between yourself, Mr. Ward, and Mr. Shrubsole, on the part of the Metropolitan Board of Works, Mr. Baxter, on the part of the London and Phœnix and the Surrey Consumers Companies, the Chairman and Mr. Livesey on the part of the South Metropolitan Company, and the President of the Board of Trade on the subject of the Metropolis Gas (Surrey Side), but I am directed to submit the following observations for the consideration of the Metropolitan Board. There were three points in your letter of the 7th instant, and referred to in the above conversation. 1. The Acquisition of Land. This was settled by the Companies agreeing to your proposal to strike out the clauses. 2. The Reserve Funds. This was settled by the agreement of the Metropolitan Board to the clauses in the Bill. 3. The proposal in Clause 61, that the power of Amalgamation should extend to other Companies south of the Thames. Practically, these words apply to the South Metroplitan Company only, and there is no objection to limiting them expressly to that company. It is only desirable that the exact consequence of omitting these words should be brought distinctly to the notice of the Metropolitan Board of Works. It is admitted on all hands that amalgamation is desirable in the interest of the consumer, and the principle of amalgamation has been approved by Parliament. The great question now is whether there should be one amalgamated company for all London, or two companies, one on the north and the other on the south side of the Thames. The Metropolitan Board, so far as the Board of Trade are aware, are in favour of two companies. If this Bill passes with the words in question this object can, and will, in all probability be attained, and the consumers of gas on the south side of the Thames will all share in the advantages of the present excellent position of the South Metropolitan Company, even though the initial price in the district of that company should be 3*s.* 9*d.*, as in the rest of London, and not 3*s.* 6*d.*, as fixed by the present South Metropolitan Bill. But if these words are not inserted the position will be very different; there is, in the first instance, no security that the South Metropolitan Bill will pass, since that company can drop it at any moment. But, whether it passes or not, it will be the desire of the Chartered Company to amalgamate with the South Metropolitan Company, and thereby make the initial price in that district 3*s.* 9*d.*, whilst the omission of the words in question will prevent the possibility of an amalgamation of the southern companies. Should no such amalgamation be possible or probable it will be very difficult for the Board of Trade to withhold their assent to an amalgamation of the southern companies with the northern companies, and such a result would not only defeat the object which the Metropolitan Board have in view, but would make the initial price in the district of the South Metropolitan Company 3*s.* 9*d.* and not 3*s.* 6*d.* Under these circumstances the Board of Trade trust that the Metropolitan Board will very seriously reconsider their suggestion to strike out the words in question." The next letter is one dated the 11th July, from the South Metropolitan Company to the Board of Trade, "Sir,—I write to inform you that the London Gas Company have proposed terms of amalgamation to the South Metropolitan Gas Company, which have been accepted, provided a complete amalgamation of the four South London Companies can be effected. I received last Saturday official information that the Phœnix Company had agreed to the proposal, and yesterday I was sufficiently informed that the Surrey Consumers Company were not unwilling to join the confederation, all being conditional on the Board of Trade Bill Gas Metropolitan (Surrey Side) being carried this Session, and of course subject to the approval of the Board of Trade. A letter similar to this was sent to Sir James Hogg this morning." Then the next letter is one from the Metropolitan Board of Works, dated the 14th of July, "Sir, Referring to the Metropolis Gas (Surrey Side) Bill now before the House of Commons, and to the letter from the Board of Trade of the 10th instant, I am directed to state that this Board having again taken all the circumstances into careful consideration, and especially looking to the desirability of a settlement of the question during the present Session, has resolved to agree to the clause in the Bill relating to amalgamation on its being altered, so as to enable the London, Phœnix, Surrey Consumers, and South

South Metropolitan Companies, or any of them to amalgamate with each other." Then there is a further letter of the 17th of July, from the Board of Trade to the Metropolitan Board of Works, stating that they will have the Bill altered accordingly.

70. Sir *Mordaunt Wells.*] Perhaps it might save trouble if you will kindly read a letter of yours, bearing date 6th April; I mean the letter which you forwarded to Mr. Walter's Committee?—I have not got it here, but you shall have it.

71. Will you kindly get it?—Certainly; I remember the letter.

72. Mr. *Clerk.*] Has it any reference to this amalgamation?—Yes.

73. Mr. *Broughton.*] One question with regard to the Bill itself. The 61st clause of this Bill contains some words which are now struck out in pencil: "and the other gas companies supplying gas south of the Thames;" what is the history of those words?—The history of those words is explained by this correspondence which I have read. Originally it was understood, as I have stated, at the meeting between the Metropolitan Board of Works and the companies, that the South Metropolitan Company should be left entirely out of this Bill, and should be left to their own Bill. From this correspondence which I have read you will see that the effect of leaving them out of this Bill altogether was to preclude the possibility of an amalgamation south of the Thames; consequently those words were inserted, possibly, in too wide a form, enabling those companies to amalgamate with any company south of the Thames. The Metropolitan Board of Works pointed out that that would enable them to amalgamate with any companies in Surrey or anywhere else, and that, in fact, the words went far beyond what was intended. It then became a question as to how they should be altered; and they have been altered in the most straightforward way, by putting in the name of the South Metropolitan Company. It would have had just the same effect if those words had been altered by saying they may amalgamate with any of the companies within the Metropolitan District, as defined by the Metropolitan Gas Act, 1860.

74. So that those words would have effected an amalgamation outside the metropolitan area?—They would have enabled the companies to do so; it would have been travelling out of the scope of the Bill altogether.

75. The inconvenience of that would have been that the Metropolitan Board of Works would have had no control, or perhaps might have had no control, over the companies brought in?—Yes, quite so; the machinery of these Acts is only applicable to the companies within the metropolitan area.

76. Consequently the alteration in ink was a restrictive alteration, and not an extending alteration?—Quite so.

77. The notices that were issued, and in consequence of which these petitions have been filed, would have included in the scheme of amalgamation the South Metropolitan Company, and even gone beyond that?—I think so.

78. Was that South Metropolitan Company in the notices?—Yes.

79. Have you got the notices?—I have not got the notices.

80. Will you just state briefly what was the position of the gas companies north of the Thames and south of the Thames this time last year, and how has it been affected, and how is it proposed to be affected by the legislation of this Session. I think you have a statement which gives it very clearly in a very few words?—I have got it here.

81. Just take the north side of the Thames?—On the north side of the Thames ——

82. That is after the Committee over which the right honourable Gentleman presided last year?—Yes, after the Bill with respect to the Commercial and the Ratcliffe Companies was passed.

83. First of all let me ask you this: there was a Metropolitan Regulation Bill before the House of Commons last year, was there not?—There was.

84. And it was on that Bill that this Committee sat so long?—Yes.

85. It was arranged that the Bill should remain in *statu quo* this Session?—Mr. Disraeli gave some understanding about giving it a position in the House of Commons.

86. But that Bill has by the arrangements which you have just described between the Board of Trade and the Board of Works, and the companies, been dropped, and the present Bill has been substituted for it?—Yes, the Bill of the Chartered Company on the north side.

Mr. *T. H. Farrer.*

26 July 1876.

87. Now, will you describe shortly what was the state of things?—In the autumn of 1875 the state of things was as follows: On the north side there were the Chartered and the Imperial Companies; they were subject practically to the legislation of 1868; the Chartered Company by the Acts of 1868, and the Imperial Company by a subsequent Act of their own of 1869; there was one distinction between them, namely, that whilst the Chartered Company were obliged to supply 16-candle gas, the Imperial Company were only bound to supply 14-candle gas. The whole of the provisions with respect to the mode of testing the standard of purity, and all provisions with respect to gas referees and gas examiners, audit, insurance, were all applied to both those companies. Their dividend, generally speaking, was 10 per cent.; the Imperial Company had a large sum raised at 7 per cent., and the Chartered Company had a certain amount of capital which was issued as preference stock at 5 per cent., with power, at the option of the holders, to turn it into ordinary shares at 10 per cent.

88. By the *Committee.*] The dividend was 10 per cent., except when there had been capital raised at some sum underneath that?—Quite so. The price for both those companies was 3*s.* 9*d.* per 1,000 feet; and both companies were subject to the revision clauses, the revision clauses being clauses which enabled the Board of Trade, on application either from the companies on the one hand, or from the Metropolitan Board of Works, or the City on the other, to appoint annually three commissioners, whose duty it should be to revise the price of gas in such a way as to enable the companies to make a dividend amounting to as nearly as possible, but not exceeding 10 per cent., or whatever other fixed sum it might be.

89. You had better give the words under which they were enabled to charge such a price as would enable them to get that dividend?—The words are in Clause 68 of the City of London Gas Act, 1868. "In fixing the illuminating power and price for any company for any year the commissioners shall observe the following rules: They shall fix such an illuminating power and such a price as shall be calculated to yield to the company with due care and management a dividend in that year (after allowing for the excess or surplus if any carried in the then last preceding year to the credit of the divisable profit and to the insurance fund of the company) attaining as near as may be, but in no case exceeding the rate of 10*l.* per centum per annum, and to make up the insurance fund authorized by this Act to be made up; they shall take into account any saving or economy which they shall be of opinion might have been effected by the amalgamation of the companies or any of them."

90. Mr. *Broughton.*] Those revision clauses applied to the Chartered and the Imperial Companies?—Nearly in the same words; practically the same.

91. By the *Committee.*] But there was a slight difference between the companies with respect to the reserve fund, was there not?—I think there was; but practically there was the same legislation applicable to both.

92. Mr. *Broughton.*] These revision clauses have been put in force in two successive years?—Yes.

93. By the *Committee.*] You had better give the reasons why the price was raised in the case of the Chartered, and in the case of the Imperial, and to what extent it was raised in each case?—The Chartered Company were allowed in 1873 to raise their price to 4*s.* 4*d.*, and in 1874 to 5*s.* for common 16-candle gas; and the Imperial Company were allowed in 1874 to charge 4*s.* 8*d.* for 14-candle gas.

94. And there has been no application to the Board of Trade to make the prices lower?—No.

95. Mr. *Broughton.*] Those were exceptional years with regard to the high price of coal?—Yes.

96. And the clauses gave great dissatisfaction?—They gave great dissatisfaction to the consumers.

97. And there was a long discussion about them last year?—Yes; there was a very long discussion about them last year, and before.

98. And they were condemned by the Committee of the House of Commons?—Yes; the Committee which sat upon the Bills of last Session substituted for those clauses the sliding scale.

99. Which is now adopted in all the legislation of this year?—Yes, quite so.

100. Those were the two big companies?—Yes.

101. Then besides those companies there are the Imperial and the Ratcliffe?—I will

—I will go on with the north side of the river. The Independent was still subject to the legislation of 1860; its dividend was 10 per cent., and it had power, under the Act of 1860, to raise the price to 4 *s.* 6 *d.*, and by arbitration to 5*s.* 6 *d.*, and its statutory illuminating power was 12 candles.

102. By the *Committee.*] It was not under the revision clauses?—No.

103. Mr. *Broughton.*] But there was a power of revision by arbitration, was there not?—Yes, there was a power of revision by arbitration under the Act of 1860, for the purpose of raising the price from 4 *s.* 6 *d.* to 5 *s.* 6 *d.*, and a power of revision also for the purpose of lowering the price under the Gas Clauses Act, 1847.

104. They could raise it?—Yes; then the Commercial Company was subject to the Act of 1875.

105. The Commercial Company last Session consisted, I believe, of the Commercial and Ratcliffe, which had been amalgamated under Act of Parliament?—Yes.

106. By the *Committee.*] The Commercial and the Ratcliffe Companies brought before the Committee of last year a Bill for amalgamation?—Yes, they did.

107. And that Bill was entertained by the Committee after they had disposed of the Metropolitan Board of Works Bill?—Yes, and after the other companies had withdrawn.

108. And the Commercial and the Ratcliffe have so far altered their Bill as to be willing to insert in it the sliding scale clauses which had been accepted by the Committee in the Metropolitan Board of Works Bill?—That is so.

109. Mr. *Broughton.*] But they did not include the Auction Clauses?—No, but their Bill adopted the provisions of the Acts of the Chartered and Imperial Companies with regard to the illuminating power and purity of gas. Then with regard to the raising of capital the clauses were somewhat different from those which had been in former Bills. They had power to raise 560,000 *l.*; half of it was to be raised by share capital and half by loan; whereas in former Bills under the practice and rules of Parliament the companies had never been allowed to raise more than one quarter of any sum by loan. In addition to that, provision was made that after they had raised 200,000 *l.* in any way, they should come to the Board of Trade and have the question inquired into as to whether they needed any further capital or not.

110. By the *Committee.*] The Chartered Company opposed that Bill, did they not, on the ground that it would interfere with their power of amalgamation?—I believe that was so.

111. But the Bill was passed in that form?—Yes, and is now law. Then with regard to the other companies I may just mention the state in which they were.

112. Sir *Mordaunt Wells.*] Did I understand you to say, that there was no power to lower the price?—There was no power to require the price to be lowered.

113. Not under the Act of 1847?—Yes, I beg your pardon, there was power under the Act of 1847, but not under the Act of 1860. I am not aware that this power has ever been acted upon.

114. By the *Committee.*] The auction clauses were neither in the Commercial and Ratcliffe Bill, nor in the public Bill, as accepted by the Committee?—No. The auction clauses are a novelty this year.

115. When you say that they are a novelty, they are clauses introduced to the advantage of the consumers?—Yes, to the advantage of the consumers; and when I say a novelty, I mean that they are a novelty in the metropolis; because they have been adopted in many provincial Bills.

116. Mr. *Broughton.*] Will you go on with your statement?—There is one Company which occupied an intermediate position, the London Company which has part of its district on the north side, and part on the south side of the Thames. That Company is subject to the legislation of 1860, and the present Bill with regard to that Company has a clause enabling them to divide their district so as to attach the part north of the Thames to the Chartered Company, and the part south of the Thames to the Southern Companies. The farther Companies on the south side of the Thames are the London, the Phœnix, the Surrey Consumers, and the South Metropolitan, the state of which I have already mentioned.

117. By the *Committee.*] Before you leave the present point, let me ask you this: Independently of this Bill, and independently of the Bill of the Chartered

Mr. *T. H. Farrer.*

26 July 1876.

Company, which is now before the House of Lords, supposing there was no legislation this year, could the Chartered Company, getting the consent of the Board of Trade, amalgamate with the South Metropolitan on a common price of 3 *s.* 9 *d.* without an Act of Parliament?—I believe they can.

118. Notwithstanding the original Act of the South Metropolitan fixing their initial price at 3 *s.* 6 *d.*?—I think so.

119. I do not know whether you can answer this now, but I think it would be useful to the Committee that you should give us the ground in the Act of Parliament which seems to you to imply that?——

Sir *Mordaunt Wells.*] I hope the Committee understand that we say most emphatically that they cannot.

Mr. *Clerk.*] It is supposing the illuminating power to be raised from 14 to 16 candles as one of the elements; it falls within all the obligations of the Chartered Gas Company, and the question is whether becoming an element in an amalgamated company it would not have all its advantages coupled with its disadvantages.

Chairman.] We had better have the exact terms of the Act before us.

Mr. *Broughton.*] I will give you the terms of the Act, but probably the real point is matter of law, but you will ask Mr. Farrer what the opinion of the Board of Trade and what their practice is.

120. By the *Committee.*] Have the Board of Trade conducted their negociations with the different companies upon that supposition, that if there was new legislation it would rest within their discretion whether or no they would allow the Chartered Company to amalgamate with the South Metropolitan, both sides being willing at 3 *s.* 9 *d.*?—That has been their view.

121. Is 3 *s.* 9 *d.* for the 16-candle gas?—Quite so; and they believe that that has been the way in which the Act has been construed in the amalgamations which have been already effected.

122. Mr. *Broughton.*] In the case of the Chartered and the Imperial the amalgamation effected a change from 14 to 16 candles in favour of the consumer?—Quite so.

123. Then you say in your view the effect of the Act is, in some cases, to give the consumer a benefit, and in some cases to give the companies a benefit?—It may be so, and for this reason, that it was supposed at the time when that amalgamation clause was passed that the Chartered Company were subject to conditions more favourable to the public than any other companies were subject to.

124. The Act of 1871 was passed after the South Metropolitan Act of 1869, which gives that power?—Yes, that is true; I was wrong. It was the Act of 1868 which gave the first powers of amalgamations, and they were extended in 1871.

125. Perhaps I had better ask you, the amalgamating clauses were the 18th to the 24th in the City Act?—Will you allow me to answer you once again; the South Metropolitan Act, it must always be remembered, in fixing 3 *s.* 6 *d.*, also fixed 14 candles.

Chairman.] That we have got.

126. Mr. *Broughton.*] The sections are the 18th to the 24th sections of the Act of 1868; the City Act, which was embodied into the Gas Light and Coke Companies Act; and then there is the Act of 1871, and the 109th section of the Chartered Act of 1868; those are the three Acts which are supposed to have that effect; but, as I said before, the Chartered is the only company that has the power to initiate proceedings?—I believe so, yes.

127. You have told us now what was the state of things with reference to all these gas companies to the end of last Session; the only Act that was passed was the Commercial Act, which absorbed the Ratcliffe; all the other companies remained under the legislation which they had remained under before?—Yes.

128. What has happened since; first, on the north of the Thames?—In November of last year the Chartered, the Imperial, and the Independent, made proposals

proposals to the Board of Trade for amalgamation under the Acts of the Chartered Company of 1868 and 1871.

129. What did the Board of Trade do on that?—The Board of Trade intimated their opinion to the company that they would sanction no amalgamation without at the same time requiring conditions favourable to the consumer. They also communicated the proposal for amalgamation to the City Corporation and to the Metropolitan Board of Works.

130. I do not quite understand why they communicated it to the Corporation?——

131. *Chairman.*] Because part of the company were within it. Because a large part of the Chartered is within the City.

132. Mr. *Broughton.*] The Imperial is not within the City?—The Imperial is not within the City.

133. At all events they were communicated with; then negociations were continued for the amalgamation of those two great companies and the Independent, and a scheme was settled, and it has been approved by Order in Council?—Yes; for the amalgamation, and the Board of Trade made it an essential condition of submitting that scheme for approval that the Bill of the Chartered Company containing the conditions which were considered to be favourable to the public should be undertaken by the amalgamated company, and that they should bind themselves in the most solemn way to carry that Bill through Parliament.

134. To do their best to carry it through Parliament?—To do their best to carry it through Parliament.

135. They have carried it through both Committees?—They have carried it through the House of Commons, and it is now referred to a Committee of the whole House in the House of Lords.

136. But the amalgamation is complete without that?—The amalgamation is complete without that.

137. By the *Committee.*] Supposing the Bill to be thrown out, will the amalgamation last?—The amalgamation will stand.

138. Mr. *Broughton.*] So that if the Bill is thrown out, and the amalgamation stands, the whole of the north of the Thames will be under the legislation of 1868?—No; the Chartered, the Imperial, and the Independent will be under the legislation of 1868 and 1869; the Commercial will be under the legislation of 1875, and the portion of the London Company north of the Thames will be subject to the legislation of 1860.

139. That is so. I mean with reference to the large companies?—I should just correct myself; they would not be subject to the legislation of 1868 and 1869, but the legislation of 1868, because the Imperial is absorbed in the Chartered.

140. Therefore the illuminating power of the Imperial will be raised from 14 to 16 candles?—Quite so, by the effect of amalgamation without the Bill.

141. That is the only effect amalgamation will have without the Bill?—It will probably have a considerable effect in enabling the companies to effect economies themselves.

142. I mean the legislative effect?—It will have, so far as I am aware, no other effect upon their external relations, or their relations to the consumers.

143. Will you look at the 16th clause of the scheme?—This is the 16th clause of the scheme of amalgamation: "The Acts relating to or affecting the amalgamating companies respectively, or their respective undertakings, in force at the date of the commencement of this scheme, shall, except so far as the same are varied by or inconsistent with this scheme, remain in full force; and all rights and powers by such Acts or any of them conferred on and vested in any of the amalgamating companies in relation to the undertaking of such company, may be enjoyed and exercised by the United Company in relation to the undertaking of such amalgamating company; and all matters which might have been done, continued, or completed by any of the amalgamating companies, or their directors, officers, or servants, under or by virtue of those Acts, or any of them, may be done, continued, or completed by the United Company, and their directors, officers, and servants, as the case may be; and every Act, so far as it relates to or affects any of the amalgamating companies or its undertaking, shall be read as if the name of the United Company had been used therein in relation to such undertaking, instead of the name of the amalgamating company, subject to this proviso,

Mr. *T. H Farrer.*
26 July 1876.

proviso, that in the event of the provisions of any Act relating to the Imperial or Independent companies respectively being inconsistent with those of any Act relating to the Gas Light and Coke Company, the provisions of the last-mentioned Act shall be deemed to be in force with respect to, and shall be observed by, the United Company."

144. The object of the Gas Light and Coke Companies Bill now before Parliament is to put the whole of the north of London, with the exception of that part comprised in the district of the Commercial Company, and that part comprised in part of the district of the London Company under the new legislation of 1876, including the 3 *s.* 9 *d.*, the 16 candles, the sliding scale, and the auction clauses?—Yes, that is the effect.

145. And the effect of the present Bill, if it was carried out, and if the amalgamation of those four companies was effected, would be to put the south side of the Thames in exactly the same position?—It would.

146. By the *Committee.*] What becomes of the Commercial and the Ratcliffe, on the north?—Those are not dealt with by the Acts of this Session.

147. There is power to the Gas Light Company to amalgamate with them, I suppose?—Quite so; the Chartered may amalgamate with them.

148. But they can only amalgamate with them on the conditions of the present Bill, if it is passed?—Quite so; but if the conditions that are adopted here, being practically the conditions that are adopted by the Commercial of last year, are adopted by the other companies, there is every probability of an amalgamation.

149. Therefore, supposing the present Bill before the Lords passes, and supposing this Bill passes, the result would be that there would be one company on the north side of the Thames, in all probability, and one company on the south side of the Thames, each of them with an initial price of 3 *s.* 9 *d.*, with an illuminating power of 16 candles, each of them with the auction clauses, and each of them with the sliding scale?—That is so.

150. Mr. *Broughton.*] Now, you have considered of course the fact that the South Metropolitan district may, perhaps, have its price raised; have you considered the fact that the South Metropolitan district may, perhaps, have its initial price raised?—The Board of Trade did consider that. They would, of course, have been extremely glad in the interest of the consumers if the initial price for the whole metropolis could have been 3 *s.* 6 *d.*, instead of 3 *s.* 9 *d.*; that appeared entirely out of the question, and a thing which the Board of Trade were not in a position to ask the companies to assent to, considering that Mr. Cardwell's Committee which took so much pains in 1868, and Mr. Forster's Committee, which took so much pains last year, both took 3 *s.* 9 *d.* as the initial price. The Board of Trade have never, I am glad to have this opportunity of saying, taken upon themselves to attempt to decide what the price of gas should be. That they have considered to be matter for the Committees on the Bills, and to be decided upon the evidence; they have not even expressed an opinion of their own upon that point; they accept as final and conclusive the decision of Mr. Forster's Committee of last year, confirming Mr. Cardwell's Committee of 1868, as the only price which, if there were to be an uniform price for the metropolis, it could be expected the companies would submit to.

151. Sir *Mordaunt Wells.*] I wish you would read that letter of the 6th of April?

Witness.] This letter was written on the 6th of April, after it had been arranged at a meeting with the southern companies that the arrangement proposed should not extend to the South Metropolitan, but should be confined to the three other companies which had no Bills before Parliament.—"Sir, I am directed by the Board of Trade to acknowledge the receipt of your letter of the 5th instant, stating that the Metropolitan Board of Works are desirous to know what the Board of Trade intend to convey by the words 'special circumstances' as applied to the company in question, and whether it was intended to suggest that, looking to the fact that that company is now supplying gas of 14-candle power at the price of 3 *s.* per thousand cubic feet, the Board might fairly ask that a lower figure should be fixed as the initial or standard price for that company, than the price of 3 *s.* 9 *d.*, as approved by the Select Committee of the House of Commons last year, and inserted this year in the Bill of the Gas Light and Coke Company.

Company. In reply, I am to state to you, for the information of the Parliamentary Committee of the Metropolitan Board, that in mentioning the special circumstances of the South Metropolitan Company, the Board of Trade did intend to refer *inter alia* to the present price and dividend of that company, but that, whilst adhering generally to the principle of a sliding scale of price and dividend, they have on this, as on former occasions, purposely avoided expressing an opinion as to what should be the initial price allowed to any company, since this is essentially a point which must be decided upon the facts of the case, and upon the evidence of witnesses. It would, therefore, seem to be a matter which ought properly to be left to the decision of the Committee to whom the Bill may be referred by Parliament." The rest of the letter has nothing to do with it.

Mr. *T. H. Farrer.*
26 July 1866.

152. Sir *Mordaunt Wells.*] That was the letter sent to Mr. Walter's Committee?—That was the letter that was before Mr. Walter's Committee. That was merely expressing what has always been the view of the Board of Trade, that they have never attempted to undertake to decide what the price should be. I am quite aware that a construction has been put upon that letter which I do not think it was intended to bear, and I also think ——

153. *Chairman.*] I think you may wait till the question is asked?—I think I have explained, by reading the subsequent correspondence, how it came to the knowledge and notice of the Board of Trade that the effect of a difference in price would facilitate a northern amalgamation, while it would throw great impediments in the way of a southern amalgamation.

Chairman (to Mr. *Clerk*).] I do not know whether you propose to call any other witness to show what was done by the Committee last year; if not, as we have got so much description of what was done, I will ask the question.

Mr. *Clerk.*] Certainly, Sir.

154. *Chairman* (to the *Witness*).] You are aware, I suppose, that the Metropolitan Board of Works inserted in their Bill at first a different initial price for the South Metropolitan from that of the other companies, in their Bill of last year?—I had forgotten the fact, but I have no doubt it was so; I am not acquainted with all that passed before the Committee.

Mr. *Broughton.*] All the papers of last year are referred to this Committee.

Chairman.] They are; then the fact is before us.

155. Mr. *Broughton.*] It has been very prominently before your mind this difference in price; taking the whole circumstances, and the whole of the probabilities into consideration, I believe you are of opinion that an uniform price in the south of the Thames will effect a settlement of this question more probably than the reservation of the 3 *s.* 6 *d.* to the South Metropolitan; what is your view upon that subject?—It was the opinion of the Board of Trade that, taking the whole subject into consideration, it was worth while paying the small extra sum that would have to be paid to the South Metropolitan shareholders, which I think would be about 4,000 *l.* a year if the initial price were 3 *s.* 9 *d.* instead of 3 *s.* 6 *d.*

156. That is supposing the initial price of 3 *s.* 9 *d.* to be charged?—No; I think in any way; I think the difference between 3 *s.* 6 *d.* and 3 *s.* 9 *d.* as the initial price ——.

Chairman.] We shall have to get at the exact fact; I think you will have to produce somebody who will be able to inform us precisely what the difference of price would be upon the present consumption, which will not be a difficult thing to do.

Sir *Mordaunt Wells.*] It bears so upon the question of extra dividend.

157. Mr. *Broughton.*] Can you give us that accurate information?—I think the difference of 3 *d.* in the initial price would give about 4,000 *l.* a year extra to the South Metropolitan shareholders; that was the best calculation I could make. Then on the other hand you would have the advantage of a northern and southern amalgamation; and of an uniform price and system throughout

Mr. *T. H. Farrer.* 26 July 1876.

the metropolis. And you must also remember that the extremely good position of the Metropolitan Company would, if it were shared amongst other companies south of the Thames, or even amongst the whole of the metropolis, tell in favour of the inhabitants of other districts of the metropolis; therefore, to some extent it is a question between those who inhabit the South Metropolitan district and the other inhabitants of the metropolis.

Sir *Mordaunt Wells.*] That is to sacrifice one district to the other.

Mr. *Clerk.*] You can cross-examine by-and-bye.

Witness.] On the contrary, the Board of Trade thought there could be no doubt that one uniform system and one uniform price of gas throughout the metropolis, is a thing very much to be desired, and a thing which will have in some way or other ultimately to be arrived at; but it did not seem to them unreasonable that Parliament, having sanctioned the principle of amalgamation, there was anything unjust in saying that an amalgamation should be effected, although the effect might be to make the charge in one particular district a little higher than it otherwise might have been, if by so doing you made the general charge lower.

158. Mr. *Broughton.*] With regard to the sliding scale, and the auction clauses, do you think them very essential?—The sliding scale is an endeavour to make it the interest of the Companies to act as other trading Companies, by giving them a share in the profits which result from economy. Under the present system of a fixed 10 per cent. dividend, it is obvious that the Companies themselves, independently of the pressure from without, have no motive whatever towards economy. As regards the auction clauses, the endeavour there has been to give the Companies no interest in raising unnecessary capital. It is quite obvious that under the present system, that is under the system which has hitherto prevailed of allowing Companies to issue capital which is, perhaps, worth double its nominal value to the existing shareholders, they are charging the consumers with twice the amount which is necessary, and what is perhaps worse than that, they leave a motive to the Companies for raising unnecessary capital.

159. Sir *Mordaunt Wells.*] When you say that, under the old system they reduced from 4*s.* 6*d.* to 3*s.* 9*d.*, under the Act of 1860?—Some of them reduced to 3*s.* 9*d.*, and some to 4*s.*; different Companies made different reductions.

Sir *Mordaunt Wells* observed that it was important, before the cross-examination commenced, to have the question which he had raised decided; namely, as to whether, according to the forms of the House, the South Metropolitan Bill could be investigated in the same way as the other.

Mr. *Michael* was heard upon the same point.

The Committee retired and deliberated.

Upon their return,

Chairman.] The Committee have very carefully considered this point. They have been a little delayed because, it being rather a difficult point, we thought it necessary to take as good an opinion as we could get. We have come to the conclusion that we ought not to stop the consideration of the Bill in its proposed alterations. But while saying that, we must not be supposed to give any opinion whatever with regard to the price, either as regards the South Metropolitan alone, or as regards all the Companies south of the Thames.

Witness.] Would you allow me to correct one or two things. In the first place, I am told I said something with regard to what is likely to be the future price of gas upon the south side of the Thames. Now I have no positive knowledge upon that point, but from all that I have heard I gather that, if an amalgamation of the Southern Companies should take place, the price throughout the whole district is likely to be 3*s.* 4*d.*

Mr. *Michael.*] I object very much to your stating that you premise by saying that you have no information upon the subject.

Witness.]

Mr. *T. H. Farrer.*

26 July 1876.

Witness.] I am told I left an impression that the price would be 3 *s.* 9 *d.*

Chairman.] I think that Mr. Farrer's opinion is so guarded that we should take it for what it is intended to be.

Witness.] I wish to guard myself from being supposed to say that it would be 3 *s.* 9 *d.* The second point is the point of what the South Metropolitan would gain as against the public generally, and that is very clear if you will just consider how the figures stand. The capital of the South Metropolitan is 500,000 *l.* The sliding scale is to the effect that there shall be for every reduction of a penny in price an increase of one-quarter per cent. dividend; consequently, if the price is 3 *s.* 9 *d.*, instead of 3 *s.* 6 *d.*, there will be 3 *d.* additional price; that would be three-quarters per cent. of dividend, and three-quarters per cent. on 500,000 *l.* will amount to 4,000 *l.*; consequently that would be exactly what the public generally (I am not speaking of districts) will lose and what the South Metropolitan will gain by giving them 3 *s.* 9 *d.* instead of 3 *s.* 6 *d.*, initial price. Then there is one other point upon which I wish to make a slight correction, namely, in my statement as to the effect of amalgamation; I am not sure whether the effect of amalgamation, simply looking to the terms of the Act with the Chartered Company, would not be to make all the provisions of the Act of the Chartered Company at once apply to the companies with which they amalgamated. But at any rate, if it were not so, an Order in Council made under the Act has the effect of an Act. If there were provisions inserted in an Order in Council similar to those inserted in recent Orders in Council, the provisions of the Chartered Act would apply, and the initial price would be so raised. Then as to whether the Board of Trade would recommend such an Order in Council or not, would be matter for consideration under the circumstances which I have stated; but it is quite clear that no company would enter upon a scheme of amalgamation without such a provision; therefore, amalgamation would be impossible without it.

Thursday, 27th July 1876.

THE RIGHT HONOURABLE WILLIAM EDWARD FORSTER, IN THE CHAIR.

Mr. *Thomas Henry Farrer*; Cross-examined by Mr. *Michael*.

Mr. *T. H. Farrer.* 27 July 1876.

160. WHAT is the date of the notice for this Bill?—It is in the Gazette of the 20th of June.

161. What companies did that notice include?—"To alter and amend, and so far as may be necessary to repeal, all or some of the Acts of Parliament, local and personal, relating to the Phœnix Gas Light and Coke Company, the London Gas Light Company, the Surrey Consumers Gas Company, and the South Metropolitan Gas Light and Coke Company."

162. Did that include the whole of the gas companies on the south of the Thames?—Yes.

163. Within the metropolis?—Within the metropolis as defined by the Act of 1860.

164. Then what becomes of the Crystal Palace Gas Company?—That is outside the limits fixed by the Gas Act of 1860.

165. Are you right in that?—I believe so; I happen to have here the Act of 1860.

166. Do not you know that the Crystal Palace Gas Company is partly within and partly without the metropolis, and is supplying a large district within?—I know nothing about that at all; I only know what is the metropolis within the Gas Act of 1860.

167. Surely, in coming for this Bill in order to produce what you say is so valuable, namely, uniformity, you would have looked to see what were the whole of the gas companies at present, and not in 1860, supplying the south side of the metropolis?—The Gas Act of 1860——

168. I do not care for the Gas Act of 1860, I am asking you as to the present time?—I cannot answer your question without referring to the Act of 1860.

169. We are quite agreed as to 1860. In the Act of 1860 the Crystal Palace Gas Company is not in the schedule; this is not legislation for 1860, but for 1876?—I am not aware that there has ever been any attempt to include, in the special legislation with respect to gas in the metropolis, any company which is not included in the Act of 1860.

170. I ask you again, are you not aware that the Crystal Palace Gas Company is supplying gas, and is supplying it largely, within the area of the metropolis on the south side of the Thames?—I know nothing about the Crystal Palace Gas Company.

171. It has the parish of Camberwell?—I know nothing about the Crystal Palace Gas Company.

172. Are there no other gas companies within the area of the metropolis on the south side?—I do not quite understand what you mean by "the metropolis." If by "the metropolis" you mean that district with respect to which there has been special legislation with reference to gas, I am not aware of any other company.

173. What do you say with respect to the Wandsworth Gas Company adjoining the Phœnix?—I have nothing to say about it.

174. Is not that one of the metropolitan gas companies on the south side of the Thames?—Not within the meaning of the Act of 1860.

175. Then, notwithstanding the advantage of which you speak from this uniformity, one side of the street may be supplied by the Phœnix Company, and the other side of the street by the Wandsworth Company, within the area of the metropolis?—There may be very good reasons, in the growth of the metropolis, for

Mr. *T. H. Farrer.*
27 July 1876.

for extending the area with respect to which there is special gas legislation; that has never yet been attempted, and the Board of Trade have confined themselves to the district with respect to which that special legislation has hitherto taken place.

176. As to uniformity, is there anything within the area which you have indicated which does not apply to the area supplied by the Crystal Palace Company and by the Putney and Wandsworth Company?—It is very possible that it may be desirable at some future time to include them within the area for gas.

177. But you have not included them?—We have not.

178. Will you tell me the date at which the Bill was printed?—It was ordered by the House of Commons to be printed on the 21st of June 1876.

179. When were the alterations made in manuscript in the Bill as submitted to the Committee?—I think that those alterations were made subsequently to the meeting of which I have spoken between the companies, the Metropolitan Board of Works, and the Board of Trade, on the 10th of July.

180. Do you know the date at which the Committee sat on the South Metropolitan Bill; it was at the end of May. I see that the 28th of May is the date of the last proceedings, and, therefore, it was about three weeks before the time when the first notice was issued for this Bill?—Yes.

181. The notice included the four companies, the Bill included three?—I think that that is a mistake.

182. I always except the 61st section with respect to amalgamation; the 61st section of your Bill as printed is the only matter which refers to the South Metropolitan Company; is not that so?—I think that that is so.

183. Excepting that your Bill only referred to the three companies?—Quite so.

184. What was your reason for striking out, or for not putting into the Bill, the first time, the South Metropolitan Company?—Because the only object that we had, and, as far as I know, the only object that we have now, was to enable the companies on the south side of the Thames to amalgamate with one another, and not to be reduced to the alternative of one amalgamation with the Chartered Company, or no amalgamation at all.

185. If your only object was amalgamation, why do you put in an initial price governing the whole of those three companies?—There is nothing that I am aware of in the Bill that expressly does so.

186. Is not the main object of the Bill to fix the initial price for the gas at 3*s.* 9*d.*?—Certainly for the three companies, the Phœnix, the London, and the Surrey Consumers.

187. If your only object was amalgamation, why did you put in other matters affecting the price?—I never said that the only object of the Bill was amalgamation. I said that the only object of the Bill, as regards the South Metropolitan Company, was amalgamation.

188. If that be so, what was your reason for subsequently introducing the South Metropolitan Company?—I have not before me a copy of the Bill as altered.

189. You are the Promoter; you are here representing the Board of Trade, and do not you know that the South Metropolitan Company was introduced even in the title of the Bill?—But these alterations were made in order to meet the views of the Metropolitan Board of Works, who objected to Clause 61 as it stands in the printed copy of the Bill, as applying to the Crystal Palace Company, and the other companies to which you refer, and to which they said that they did not wish it to apply. The Bill was consequently altered so as to express in the most distinct form what was intended, namely, that this power of amalgamation should extend to the South Metropolitan Company, as the only company besides these three, on the south of the Thames, that was within the Metropolis Gas Act of 1860.

190. With great deference to you, that is no answer to my question. Why do you now introduce the South Metropolitan Company into all parts of the Bill, and not merely as to amalgamation. Did you know that it was so introduced?—That was settled with the Metropolitan Board of Works; but as far as the Board of Trade are concerned those provisions with regard to the South Metropolitan Company, excepting the provision with regard to amalgamation, are of no importance whatever.

Mr. *T. H. Farrer.*

27 July 1876.

191. Then you do not object to their being struck out?—I do not object to their being struck out at all, always retaining the provision with respect to amalgamation.

192. Then we may at once strike out the whole of the reference to the South Metropolitan Company, except that contained in the 61st Section?—This is so much a matter of draftmanship, that I should like to consult the agent.

192*. Will you show me anything in the Bill which fixed the initial price at 3*s.* 9*d.* on the South Metropolitan Company?—There is nothing in the Bill as deposited which fixed it.

193. Therefore, until we had the Bill as amended in manuscript, it only referred to the South Metropolitan Company, *qua* amalgamation?—Quite so; but you must have regard to the effect of amalgamation.

194. The Bill as originally introduced into the House of Commons, and as originally referred to this Committee, only had reference to the South Metropolitan Company as far as amalgamation was concerned?—Quite so.

195. I understood you yesterday to tell the Committee that so far as the Board of Trade were concerned they did not care about an initial price, and that they left it to the decision of the Committee?—Quite so.

196. The Bill as altered (I will not say amended) and presented to the Committee now fixes the initial price at 3*s.* 9*d.* for the South Metropolitan Company, when a Committee of this House after deliberating has fixed 3*s.* 6*d.*?—It may be so.

197. If you do not interfere with the initial price, will you explain how you can justify bringing in a Bill entirely to supersede the decision of a Committee in this very Session?—I have already explained that the object of the Board of Trade was to be enabled to carry into effect the principle of amalgamation, and not to be reduced to the alternative of an amalgamation with the northern companies, in which case the price of the South Metropolitan Company would have been raised to 3*s.* 9*d.*, or no amalgamation at all. That was the object of the Board of Trade, and their only object, and their object would be perfectly answered by the Amalgamation Clause alone.

198. Are you willing to strike out all the other references to the South Metropolitan Company, as to fixing the initial price, and making the other portions of the Bill apply to them, leaving the Amalgamation Clause, so as to give the power of amalgamation?—That certainly would effect the object which the Board of Trade had in preparing and introducing this Bill. I decline to give an opinion here as a witness how the Bill should be drawn.

199. But you are here representing the Board of Trade; you are the Promoter, and the only gentleman that we can ask, and I ask you whether there is any other object which you have as the Promoter, except to provide for the amalgamation of these companies?—No, that has been the only object of the Board of Trade.

200. I ask you seriously to consider this matter. Do you wish by this Bill as now presented to the Committee to over-ride the decision of a Committee of the House, who, when 3*s.* 9*d.* was presented to them by the South Metropolitan Company, after deliberation and consideration of the question said that it should be 3*s.* 6*d.* I ask you deliberately, do you wish, as representing the Board of Trade, the Promoters of this Bill, to over-ride the decision of that Committee?—The object of the Board of Trade will be entirely answered if the powers of amalgamation are such as to enable them, if a scheme of amalgamation is presented to them, to amalgamate the South Metropolitan Company with the other companies south of the Thames.

201. I ask you not with respect to amalgamation; you have given no answer to the question; do you wish to represent to the Committee that the Board of Trade have any wish to dictate in any way as to the price (you said yesterday that they were not competent to mention the price), and to over-ride the deliberate action of a Committee of this House?—No; but the Board of Trade want to know what their powers are, and what they are to do if a Committee of this House in one clause say that there shall be amalgamation, or that there may be amalgamation, and in another clause insert a price which is entirely inconsistent with the principle of amalgamation; then the Board of Trade want to know what their position is to be.

202. Will you tell me why it is impossible to have amalgamation with 3*s.* 6*d.* on the south side of the Thames?—I do not myself see how any company which has

has 3 *s.* 9 *d.* as the initial price could amalgamate with one which has 3 *s.* 6 *d.* as the initial price.

203. As yet we have arrived at no initial price; the Committee have not decided it; you are taking it for granted that the 3 *s.* 9 *d.* in your Bill is to be fixed without any appeal; this Committee have not decided on 3 *s.* 9 *d.*?—Then I must go back to the reason which induced the Board of Trade to consent to an amalgamation of the companies on the north side of the Thames, and which induced them to accept the agreement between the Metropolitan Board and the companies on the south side of the Thames, and that reason is that first of all Mr. Cardwell's Committee in 1868, and subsequently Mr. Forster's Committee of last year, fixed 3 *s.* 9 *d.* as the initial price, and that the companies and the Metropolitan Board agreed to that.

204. You surely do not wish to place Mr. Forster, as the Chairman of this Committee, in the false position that he is to be tied to 3 *s.* 9 *d.*, because sitting upon another Committee he reported upon 3 *s.* 9 *d.*?—No.

205. You must see that, according to your reasoning, it is quite useless for us to appear before Mr. Forster, or to endeavour to get the price down to 3 *s.* 6 *d.*?—Not at all.

206. But that is the representation which you made?—Not at all.

207–8. *Chairman.*] Of course everybody will understand that neither Mr. Farrer nor anybody else could suppose that I should have accepted my present position if I was tied down to anything of this kind?—I was not speaking as to what shall be done with this Bill in this Committee. I am speaking of the position of the Board of Trade when they introduced this Bill.

209. Mr. *Michael.*] Are you aware that in the South Metropolitan Bill clauses were introduced for the express purpose of amalgamating the South Metropolitan Company with any other company?—I am.

210. You say that what the Committee did by the 64th section of the South Metropolitan Bill is impossible to be carried out?—It is impossible to be carried out, if the price of 3 *s.* 9 *d.* remains the price for other companies with which they are to amalgamate.

211. Then you say that that being the justice of the case, in order to secure your idea of amalgamation the persons who are now supplied at 3 *s.* 6 *d.* must suffer an extension to 3 *s.* 9 *d.*, in order to secure a fancied uniformity which, according to your own showing, cannot be carried out on the south side, as you have left out the other companies. You say that every one who pays 3 *s.* 6 *d.* must, under this Bill, pay 3 *s.* 9 *d.*?—It is, as I put it yesterday, a question of the balance of advantages. I showed yesterday that, as between the whole public on the one side and the South Metropolitan Company on the other, the difference between 3 *s.* 6 *d.* and 3 *s.* 9 *d.* would amount to something like 4,000 *l.* a year to the company, and that if amalgamation takes place, whatever other benefit arises from the present cheapness in the South Metropolitan Company would be carried over a larger area.

212. What advantage is it to me, who pay 3,000 *l.* for gas?—My belief is that you would not be called upon to pay more than you pay at present.

213. You have said that it is essential that 3 *s.* 9 *d.* should be the initial price for the companies?—I said that that had been settled, and that the Board of Trade were bound in the then state of things to accept it.

214. But it had not been settled; 3 *s.* 6 *d.* had been settled by the House of Commons?—Yes, but 3 *s.* 9 *d.* was settled by the other companies.

Chairman (to Mr. *Michael*).] I do not wish to check you, but have you not got almost as much as you want on this point?

Mr. *Michael.*] I, Sir, want to come to the practical matter, and not unnecessarily to take up your time. The witness has stated that he is willing to strike out of the Bill everything affecting the South Metropolitan Company excepting the amalgamation.

Mr. *Clerk.*] I must ask to what verbal alterations my learned friend objects.

Mr. *Michael.*] I object in the first place to all your verbal alterations, except as to the amalgamation of the South Metropolitan Company; Mr. Farrer is the promoter of the Bill, and says that he is willing to strike them out.

Mr. *T. H. Farrer.*

27 July 1876.

Witness.] No, I am not the promoter, I am the Secretary to the Board of Trade, and I really decline to say what we will do, and what we will not do; I am in the hands of Counsel upon that matter.

215. Mr. *Michael.*] I suppose that we are not to have the advantage of seeing any other gentleman representing the Board of Trade here?—There are counsel here; I can tell you what was the object of the Board of Trade in preparing the Bill.

216. Then it must depend upon the Committee striking out what you have said you are ready to strike out. With respect to the South Metropolitan Company, I understood you yesterday to say, immediately before we left, that you had made a calculation that 3 *d.* would really inure to a loss of 4,000 *l.* on the consumers?—I think so.

217. Are you aware what the total capital of the South Metropolitan Company is?—I think that it is 500,000 *l.*

218. Is it not 540,000 *l.*?—It is 500,000 *l.* I think; 430,000 *l.* has been called up, but it is 500,000 *l.* which they have the right to call up.

219. In the schedule attached to the Bill I see 200,000 *l.*, and then 50,000 *l.*; and then 250,000 *l.*; that makes 500,000 *l.*, and then I see 125,000 *l.* under the Act of 1876?—I throw that out of account altogether.

220. That leaves 500,000 *l.* Upon the whole of their capital they are receiving 10 per cent.?—Yes, upon as much as is called up.

221. They have raised, I believe, 430,000 *l.*?—So I understand.

222. And they have the power to raise 70,000 *l.* more?—Yes.

223. On the whole of that capital they take 10 per cent.?—Yes, I believe so.

224. They have no borrowed money?—Yes, I think that they have 62,500 *l.*

225. They have the power to raise 62,500 *l.*, but have never exercised it?—No, they have not; they have no borrowed money.

226. *Chairman.*] The last column in the Schedule gives 62,500 *l.* borrowed money.

Mr. *Michael.*] I speak under correction, sir, but, as far as I remember, not a farthing of money has been borrowed; it is merely the ordinary power, which, as Mr. Farrer told us yesterday, is inserted in the Acts of gas companies, to allow a fourth of the capital to be borrowed.

227. To the *Witness.*] If the South Metropolitan Company had borrowed that one-fourth on the total of their capital, what would have been the saving to the consumers? I see that there is the following recital in their Bill of 1876: "And whereas further powers were granted to the Company, but they have not borrowed any money, nor do they owe any money, excepting for their current expenses." I understood you to say that this 3 *d.*, which is the difference between 3 *s.* 6 *d.* and 3 *s.* 9 *d.*, would entail a loss of 4,000 *l.*?—So I make it out.

228. It follows therefore that the difference between their present charge of 3 *s.* and 3 *s.* 9 *d.* would involve a loss of 12,000 *l.*?—I do not quite follow you.

229. If 3 *d.* produces 4,000 *l.* will not 9 *d.* produce 12,000 *l.*?—Yes, that is very obvious.

230. They now charge 3 *s.*?—Yes.

231. If this Bill passed they would at once be enabled to charge 3 *s.* 9 *d.*, and divide 10 per cent.?—Yes; they now charge 3 *s.* for 14-candle gas.

232. They are supplying 16-candle gas at 3 *s.* Take that from me; we have it in evidence?—They are not bound to do so.

233. They are now supplying 16-candle gas at 3 *s.* By this Bill which is now before the Committee, if it be passed into a law, they will be enabled to charge 3 *s.* 9 *d.* in the place of 3 *s.*, and divide 10 per cent.?—Yes; but when you come to matters of fact, I do not in the least believe that they would charge 3 *s.* 9 *d.*

234. That is not a matter of fact, it is a matter of opinion?—Yes.

235. I should like to go by the facts upon which you base your opinion?—With the sliding scale it is their interest to charge as low a price as possible.

236. And therefore to divide a larger dividend?—Yes.

Mr.

Mr. *Michael.*] Sir, at page 69 of the evidence before your Committee of last year, Question 1019, Mr. Livesey was asked, "But as a matter of fact, with regard to the working of the company in respect to illuminating power, how much have you given the consumers? (*A.*) By the new burner fixed by the referees the average illuminating power has been a trifle in excess of 16 candles; say 16 candles. (*Q.*) Say a good 16 candles. (*A.*) Yes, during all last year it was so; it was occasionally under; but the average was well over it."

Mr. *T. H. Farrer.*
27 July 1876

Witness.] Allow me to say that when you require them to supply 16-candle gas the average must be a good deal over it.

237. I will deal with that when the time comes. You have no experience, have you, in the practical manufacture of gas?—None. I do not pretend it.

238. You cannot tell me what difference the new burners introduced in the way of testing have made in respect of the average number of candles which gas represents?—No. I would rather not go into it.

239. And you cannot tell me whether or not the introduction of new burners has not very much inured to the advantage of the gas companies in testing gas?—I would rather not go into the question of gas burners.

240. All matters being alike, it is simply an arithmetical sum; you have power to charge 3 *s.* 9 *d.* as the inital price, which is a loss of 12,000 *l.* upon the consumers?—No, I think not at all; because it is coupled with the sliding scale, which makes it the interest of the company to charge not that initial price, but as low a price as they can.

241. But they can put on 9 *d.*, bringing up their dividend to 12¼ per cent. instead of 10?—Yes; but you ought to make your comparison either between actual price and probable price, or between present statutory price and future statutory price.

242. I am doing precisely that thing; I am taking the present price; you are aware, I suppose, that statutory price means statutory maximum price, regulated by the Act of 1847?—The Act of 1860, I think. As regards the South Metropolitan Company, it is the price regulated by the Act of 1869.

243. Are you not aware that gas companies can only charge such a price as will enable them to get the maximum statutory dividend?—Quite so.

244. And by the Act of 1847 the moment that they charge a higher price, so as to get a larger dividend than their maximum statutory dividend, they are obliged to diminish the price charged to the consumers?—You may then go to the court of quarter sessions, and ask them to appoint an accountant or proper person to look into the accounts of the company, and say to what the price ought to be reduced, in order to give them a dividend of 10 per cent.

245. Those are simply the means by which the object is to be accomplished?—Yes; but a great part of these contests has been about the means.

246. As the South Metropolitan Company have always been praised for their good management, they may be presumed to be strictly within the law; the object of the law is that no more shall be charged to the consumer than is sufficient to earn the statutory dividend?—That is the object of the law, no doubt.

247. Are you aware that last year the South Metropolitan Company did earn their statutory dividend?—Yes.

248. Under those circumstances 3 *s.* is the statutory price, and they cannot charge anything more?—Yes, if the revision clauses are effectual.

249. That has nothing to do with the revision clauses; under the statutory power could they last year have obtained anything beyond 3 *s.*?—Not if the revision clauses were effective.

250. By the revision clauses do you mean the Act of 1847?—Yes.

251. By the revision clauses we have always meant the clauses introduced into our Act from the Act of 1848?—I will not quarrel with you about a word. There was one form of revision in the Act of 1847, and another form in the subsequent Act.

Chairman.] In order to make a distinction as to what was imposed upon

Mr. *T. H. Farrer.*

27 July 1876.

the Chartered and the Imperial Companies by their Acts in consequence of Mr. Cardwell's recommendation of revision clauses, we have always understood that these clauses of the Act of 1847 were what were called the arbitration clauses.

Mr. *Michael.*] The revision clauses we have always consented to call those clauses which apply to the Board of Trade revision.

Witness.] Under this section in the Act of 1847 you go to the court of quarter sessions, who may employ an accountant or other competent person who is to report, and they may examine witnesses, and then it is the court of quarter sessions themselves who are to make the order.

252. Mr. *Michael.*] Three shillings being the price now charged, and upon which the South Metropolitan Company earn their statutory dividend, they have by the Bill a power to charge 3 *s.* 9 *d.* as their initial price; that is so, is it not? —You are speaking of the Bill as altered in manuscript.

253. The Bill as altered in manuscript?—I suppose that that is so.

254. If I am allowed to go away from the written alterations, of course I shall not ask you any further question about it?—I cannot give you an answer to that without consulting with counsel, and taking the directions of the President.

255. That would make 2 *l.* 5 *s.* per cent. of addition to their dividend?—I have not made the calculation. I am quite ready on your assumption to admit your figures.

256. The initial price is fixed at 3 *s.* 9 *d.*; they are now charging 3 *s.*, earning 10 per cent., is that right?—I believe that that is right, 3 *s.* for 14-candle statutory gas.

257. No, they are supplying 16-candle gas, as I have read to you?—No, I say that when you compel them to supply 16-candle gas you will compel them to supply something more than they now supply.

258. That may be so, but putting that for the moment out of the question, is it not the fact that they, if they charge 3 *s.* 9 *d.*, will have a dividend of 12 *l.* 5 *s.* per cent.?—Yes.

Chairman.] I think we may take that for granted. I am afraid that I may be considered to be interfering a little too much, but time is particularly precious at this period of the Session. I think that what the Committee thoroughly understand is that supposing that this Bill was passed with the alterations, the South Metropolitan Company would be able to get a 12¼ per cent. dividend, allowing for any little difference that there is in the expenses from having a statutory order of 16-candle gas instead of 15-candle gas. You are quite correct in what you have stated. It is also true that it is one thing to do a thing of your own will, and another to be forced to come up to the provision.

Mr. *Michael.*] Quite so, Sir. I take it with all those reservations.

To the *Witness.*] You have told me that in 1875 the South Metropolitan Company earned their maximum statutory dividend at the price of 3 *s.*

Mr. *Clerk.*] No, they paid it but they did not earn it, as I understand from my learned friend Mr. Venables.

Mr. *Michael,*] Technically, my learned friend Mr. Clerk is right; I believe that they were short a halfpenny.

Mr. *Richards.*] They were short a good deal more than that.

259. Mr. *Michael* (to the *Witness*).] The whole of the capital being raised at 10 per cent., what is the sum extra which is charged to the consumer in order to pay that 10 per cent., in excess of what would have been paid if the Company had borrowed one-fourth of their capital, as is usual with other companies?—I have not done that sum, but it is a mere question of arithmetic.

260. It comes out somewhere between 6,000 *l.* and 7,000 *l.*; that is to say, the consumers have paid in the way of dividends every year to the South Metropolitan Company 6,000 *l.* in excess of what they would have paid if the Company had borrowed a portion of their capital instead of receiving 10 per cent. upon it? —I have

—I have said that what the Board of Trade have done this year is to introduce the Auction Clauses, which will prevent this issuing of capital at a nominal value. I only wish to point out what has been the view of the Board of Trade, namely, that this mode of issuing capital is a very extravagant one.

261. Then I may take it that a large sum of money annually has been paid to the shareholders in the South Metropolitan Company in the way of dividends, which would have been saved if the South Metropolitan Company had borrowed a portion of their capital?—I am quite ready to admit that.

262. It is 5 per cent. upon about 100,000 *l.*, which they ought to have borrowed according to the ordinary rate, upon which they would have saved 5 per cent., namely, 5,000 *l.* a year, which has been paid to the shareholders out of the pockets of the consumers, and which otherwise would not have been paid? —I am quite ready to admit that.

263. £. 5,000 being taken away from the dividends, which has been paid unnecessarily, if the Company had borrowed instead of receiving the money as capital, how much would it have inured in the reduction of the price of gas?—That is again a question of arithmetic.

264. Will you take it from me that that is 4 *d.*; you have said that 4,000 *l.* represents 3 *d.*, and therefore 5,000 *l.* represents 4 *d.*?—Yes.

265. Therefore, if the South Metropolitan Company had borrowed money instead of receiving it as capital, they might at this time have supplied gas at 2 *s.* 8 *d.*?—It is very possible.

266. In your opinion as representing the Board of Trade, is it fair that consumers should have an initial price of 3 *s.* 9 *d.* put upon them, when 2 *s.* 8 *d.* would allow the company to pay their statutory dividend?—I have already said that I do not think that their actual price will be 3 *s.* 9 *d.*

267. Under this Bill have they not the power to do the thing which I have represented to you?—Yes, but the question of course is whether they will do it or not.

268. The proposal in the Bill is that the whole of the future capital to be raised by these companies is to receive 10 per cent.?—Yes.

269. *Chairman.*] In what clause is that?—I can explain that in one moment. The whole of the nominal capital is to receive a dividend of 10 per cent.

Chairman.] What is the clause?

Mr. *Michael.*] It is in the second schedule, Sir, at page 18.

270. Mr. *Clerk.*] It is by Clause 9. You say that it is to be offered by auction, and you say that it is the nominal value?—Yes; I only want to see what counsel wish.

Chairman.] Are you not rather mixing up two things. It is one thing to say that the Bill would empower the South Metropolitan Company to get 10 per cent. upon all their capital which they have already issued, including that which has not been called up, and it is another thing to say that if they want additional capital hereafter, they are secured 10 per cent. upon it.

Mr. *Michael.*] I merely go upon the last point, Sir. I have nothing to say to the first point. Will you look, Sir, at page 18, with regard to the Phœnix Gas Light and Coke Company. Under the Metropolis Southern Companies Gas Act 1876, there is a power to raise 7,500 20 *l.* shares, making an amount of 150,000 *l.*, at 10 per cent.

Witness.] That is so.

Mr. *Michael.*] Do you follow me now, Sir?

Chairman.] Yes, but that is capital which they are already authorised to raise.

Witness.] It is capital which they are authorised to raise by Clauses 7 and 20 of the Bill.

271. Mr. *Michael.*] By the first Act of the Phœnix Gas Company, 540,000 *l.* was empowered to be raised at 10 per cent.?—Yes.

272. By the next Act, 144,000 *l.* was empowered to be raised at 5 per cent.? —Yes.

Mr. *T. H. Farrer.*

27 July 1876.

273. By the Act of the 27 & 28 Vict., power was given to raise 360,000 *l.* at 7½ per cent.?—Yes.

274. By the present Bill they are empowered to raise 150,000 *l.* at 10 per cent.?—That is so.

275. That 150,000 *l.* will receive 10 per cent. in any event?—Yes.

276. But as you insert the Auction Clauses, it probably may sell for 300,000 *l.*, and the additional 150,000 *l.* will be put into the capital of the company, receiving no dividend?—That is so.

277. The 360,000 *l.* and the 144,000 *l.* were raised at an average of 6 per cent.; was not the 360,000 *l.* raised at 7½ per cent.?—That was the nominal rate; I do not know at what rate it was actually raised.

278. The maximum statutory dividend which could be paid to the shareholders was 7½ per cent. upon the 360,000 *l.*?—Certainly.

279. Are you aware, as representing the Board of Trade, that in all Gas Bills, with the exception of the Chartered Company under exceptional circumstances, new capital is only allowed to be raised at 7½ per cent.?—I am not aware what the universal practice is, but I am aware of the contrary in a great number of cases.

280. Can you tell me of any exception, except in the case of the Chartered Company; within the last five years?—Within the last five years, No.

Mr. *Clerk.*] By the South Metropolitan Bill of this year, 10 per cent. is the dividend upon the capital to be raised.

281. Mr. *Michael* (to the *Witness.*).] Can you give the Committee any other example?—No; I know that it has been given to the Chartered Company, and it is given again in the Bill before the House of Lords.

282. If money has been raised at 7½ per cent. by the Phœnix Company, why should 10 per cent. now be given?—Because you make it subject to the Auction Clauses and the sliding scale.

283. Do you represent that the Auction Clauses do not inure to the benefit of the shareholders already existing in the concern?—Yes; I mean to say that the thing will be sold at its market price.

284. I ask you again, do you mean to represent to the Committee that the action of the Auction Clauses, with 10 per cent., does not inure to the benefit of the existing shareholders in the gas concern?—Certainly not, unless they buy those shares at the auction, and then they will receive just the same dividend upon their investment that anybody else investing in the company will receive.

285. That shows me that you have not considered the Auction Clauses. Do you wish the Committee to understand that the action of the Auction Clauses in raising 150,000 *l.* at 10 per cent. will not inure to the benefit of the present shareholders?—No, I do not think that it will.

286. Then I venture to say again that you cannot have considered the action of the Auction Clauses. £. 150,000, you have said, will be likely to raise 300,000 *l.* instead of 150,000 *l.*?—Yes, assuming the market price of a 100 *l.* share, at the time, to be 200 *l.*

287. I am assuming that one figure, 150,000 *l.*, therefore, will be put into the capital of the concern, without receiving any dividend?—Yes.

288. And it will enable the company supplying gas to supply it at prices varying from one penny to sixpence cheaper. £. 150,000 put to the 400,000 *l.*, the South Metropolitan Company receiving no dividend upon the 150,000 *l.*, will allow gas to be supplied at a price of at least 5 *d.* cheaper?—I am not sure that I follow you.

289. £. 150,000, receiving no dividend, put into a trade concern will allow you to supply the article made by that 150,000 *l.*, not having to pay any dividend upon it, at a much cheaper price over the whole of your yield from your trade concern; surely I should have thought that you, the representative of the Board of Trade, in dealing with these Auction Clauses, must have seen that that was preliminary to the whole matter; you must have seen that, putting 100,000 *l.* into a concern which has already 100,000 *l.*, and taking no dividend for that 100,000 *l.*, there must be a great reduction in the cost price of the article manufactured?—Yes; but then you must remember that the effect of the sliding scale is to make it to the interest of the companies to have as small a capital as possible, because the smaller the capital which they have the larger the increase of dividend which they will be able to get by reducing the price.

290. But

290. But there is 150,000 *l.* put in, receiving no dividend, of which the whole of the existing shareholders are to receive the benefit; you can therefore supply gas much cheaper, having 150,000 *l.* on which no dividend is to be paid, cannot you?—Yes.

291. The other 150,000*l.* has only been raised because there is a larger demand for gas, and the gas works require 300,000*l.* to be expended in the extension of the works to meet that demand?—Quite so.

292. We may suppose that the gas is made quite as cheaply after they extend their works as before?—Yes, I quite admit that.

293. Under those circumstances, do not the present shareholders derive the whole benefit of this 150,000*l.* put into the concern, it enabling them to supply gas at 4*d.*, 5*d.*, or 6*d.* cheaper, and to get the advantage of the sliding scale?—My first answer to that is, that the holders of the existing capital will be unwilling to increase their capital, because every new increase of capital involves a division of the profits amongst a larger amount of shareholders. My second observation is this, that under the sliding scale a larger proportion of the profit will go to the consumer in the shape of the reduction of price than will go to the shareholder; and what is more than that (and it is a very important consideration) is this, that you have only to consider in this matter the existing capital, because the future capital will be subject to the Auction Clauses, and will be raised at its market value, or at any rate it will be so to a very considerable extent. Consequently for every reduction in the price the existing capital will continue to receive the same sum as it does now.

294. If the price of gas is reduced?—No. Take it in this way. The existing capital of the southern gas companies entitled to an increase of dividend on the sliding scale is about 2,600,000 *l.*; one per cent. on this would be 26,000 *l.* The quantity of gas supplied by the southern companies in 1875 was about 3,600,000 thousands of cubic feet; 4 *d.* reduction on this, equivalent to one per cent. of dividend, would be 60,000 *l.* The consumption of gas increases at the rate of about 7 or 8, say 7 per cent. per annum. It therefore doubles in 14 years.

295. That is wrong, because it is 7 per cent. compound interest?—Compound interest on the consumption of gas.

296. Certainly; it is not 7 per cent. of the amount to-day, because that is an absurdity; it is 7 per cent. *de anno in annum*?—Very well, I do not care.

297. It is 7 per cent. on 10,000 *l.*, and then 7 per cent. on 10,700 *l.*, and so on?—Very well; take 10 years if you please; it will double in 10 years; consequently in that time the advantage to the consumer will be doubled.

298. *Chairman.*] I understand that the Auction Clauses, especially Clause 12, say this, that any profit which is obtained by the premium is not to be divided as dividend, but "shall be expended in extending or improving the works of such gas company, or in paying off money borrowed or owing on mortgage by such gas company"?—Yes.

299. Therefore, of course that premium money will enable the gas company to do its work more cheaply?—Yes.

300. Consequently, if there was no limitation whatever with regard to dividend, they would be able to get a greater dividend at the same price?—Yes.

301. Or they would be enabled to sell at a lower price at their old dividend?—Yes.

302. Taking the effect of the Auction Clauses, combined with the effect of the sliding scale, is not the meaning of the sliding scale this: that if the companies find that they can make improvements in the conduct of their business, the advantage obtained by those improvements is to be divided between the consumer and the producer?—That I understand to be so.

303. It stands to reason that it must be so, that if the price of gas is lowered by 1 *d.* the dividend may be increased ¼ per cent.?—Quite so.

304. I do not know whether you recollect what happened to be the relation, but I believe that the relation was that in that division the consumer got more than the manufacturer?—The consumer gets, I think, upon the north side nearly two-thirds, and the existing capital one-third.

305. Do you know what it is on the southern side?—On the southern side the proportion, taking the existing capital, is larger; I think that 26,000 *l.*, with the existing capital, would go to the shareholders, and 60,000 *l.* to the consumers; that is the proportion.

Mr. T. H. Farrer. 27 July 1876.

306. Then the effect of the two provisions together, the Auction Clauses and the sliding scale would be this,—that while on the one hand it would not be true to say that no advantage inures to the present shareholders from the application of the auction clauses; on the other hand, it would not be true to say that the whole of the advantage inures to the shareholders, but the effect would be that the saving of cost in the making of gas would lower the price, and increase the dividend?—Quite so.

307. Consequently the result would be that both parties would share in the advantage?—Yes; and I think also that there is this, that supposing there to be a certain amount of profit to be divided, the smaller the amount of capital the larger the amount which would go to the holders of that capital; and consequently, in my view, the sliding scale makes it to the interest of the shareholder not to have more capital than is necessary.

308. Mr. *Michael.*] Surely a shareholder will never raise more capital than he can expend properly upon the works; you do not suppose that the directors would spend money for the mere sake of spending it, in order to give the shareholders the benefit of it?—I wish to make no imputations against anybody, but I think it a very unfair thing, both to the public and to the companies, to put them into a position in which they are tempted to raise unnecessary capital.

309. You said that no advantage would accrue to the present shareholders from the operation of the Auction Clauses?——

Chairman.] I think that Mr. Farrer, in his answer to me, withdrew that statement?

Witness.] Yes, but I should like to reconsider the point.

310. Mr. *Michael.*] How much would it inure to their advantage in the case of the South Metropolitan Company; take the present capital at 450,000 *l.*, and 150,000 *l.* put in, making 600,000 *l.*, the 150,000 *l.* receiving no dividend, it would make a difference of 3 *d.*, at least, in the price of gas?—I am unable to follow that.

311. It would be taking one-fourth of their capital, upon which it was not necessary in any way to have any dividend; and as they require about 1 *s.* to pay their dividend, it would take off one-fourth, and would reduce it to 9 *d.* instead of 1 *s.*; would it not put 15 *s.* per cent. in each of the shareholder's pockets?—I do not follow your figures.

312. You see, I suppose, that in reality the larger the amount of dividend which you allow on a share the larger will be the amount of profit which you give to the shareholder?—And to the consumer.

313. Never mind the consumer; there is a benefit to the consumer in every reduction in the price of gas. If 7½ per cent. was sufficient to be given to the shareholder to raise 360,000 *l.*, only three or four years ago, why should you now give 10 per cent. instead of 7½ per cent.?—Because it appeared to us, with these Auction Clauses, to be a matter of indifference.

314. With 7½ per cent. you sell your 100 *l.* shares at 150 *l.*, instead of 200 *l.*; therefore, upon every 100,000 *l.* of capital you would put 50,000 *l.* of unremunerative capital into the concern, or capital requiring no dividend. If you sell 10 per cent. capital at 200 *l.*, you would sell 7½ per cent. capital at 150 *l.*?—Yes.

315. And then you would put 50 *l.* into the concern which would bear no dividend?—Yes, the other 100 *l.* bearing 10 per cent.

316. You, therefore, would put in 75,000 *l.* for the benefit of the present shareholders, upon which they would receive that difference arising from the cheaper price of gas?—For the benefit of the shareholder and of the consumer, because the larger amount from the economy goes to the consumer.

317. You may be quite right; but I am asking you especially to direct your mind to the benefit accruing to the present shareholder. I am now directing your attention specially to the Auction Clauses as affecting the interests of gas shareholders. If this 150,000 *l.* was raised at 7½ per cent., would you not be putting 7,500 *l.*, for the benefit of the gas shareholders, into the concern which would receive no dividend?—For the benefit of the gas shareholder and of the gas consumer.

318. Will you direct your mind specially to the gas shareholder?—When you put

put a sentence into my mouth which conveys only half the truth, I must supplement it by stating the whole truth.

319. I ask you to consider the effect of this proceeding with regard to the gas shareholder; you see what my point is. You have already raised 360,000 *l.* at $7\frac{1}{2}$ per cent; why should this 150,000 *l.* be raised at 10 per cent. Is not a bonus of 75,000 *l.* upon that capital sufficient to be put into the pockets of the existing shareholders?—It would not go into the pockets of the existing shareholders. I have told you that over and over again.

320. You expressly told the Chairman the opposite. How have you arrived at the 150,000 *l.* for the Phœnix Company?—This, as I have told you before, was settled between the Metropolitan Board of Works representing the consumers, and the companies, and the Board of Trade acted as arbitrators.

321. Do you mean to say that the Board of Trade have any power to take the raising of capital out of the hands of Parliament and to settle it between themselves?—Certainly not; this matter is before Parliament at the present time.

322. You say that you have settled it out of this court; I must ask you for the reasons?—If the Board of Trade had settled it, I should not have been here to-day; but it was for the convenience of both parties, because there was a difficulty in bringing in this Bill, that the Board of Trade undertook the bringing in of the Bill, which ought properly to have been brought in either by the companies or by the Metropolitan Board of Works.

323. Has the Phœnix Company called up the whole of its capital?—I cannot tell you.

324. Then you can give me no reason why the 150,000 *l.* should not be 100,000 *l.*?—I tell you that it was settled between the companies and the Metropolitan Board of Works.

325. Can you give any reason to this Committee why any sum should be put in as further capital to be raised by the Phœnix Company?—These questions of capital were very carefully considered by the Metropolitan Board of Works; and the Board of Trade thought themselves justified in acting on the conclusions of the Metropolitan Board of Works.

326. But do you say that this Committee are bound to accept the conclusions at which the parties have arrived?—Certainly not.

327. It is proposed by this Bill to authorise the Phœnix Company to raise 150,000 *l.*; I want the Committee to know what are the works upon which the 150,000 *l.* are proposed to be expended; and I first ask you do you know what sum of money, if any, the Phœnix Company have in hand?—No, I do not.

328. Do you know the rate of increase of the Phœnix Company?—No.

329. Do you know how far their retorts meet their supply?—No.

330. Do you know their gas-holding power?—No.

331. Do you know what extension of works they require?—No.

332. Do you know how far their land meets their requirements?—No.

333. Do you know what money must be expended within the next five years to meet their supply?—No.

334. Then upon what data do you base your opinion?—I have already told you.

335. And that is the only answer which you will give?—Yes.

336. Mr. *Stevenson.*] Are the Auction Clauses to apply to this 150,000 *l.*?—Certainly.

337. Mr. *Michael.*] Of course, this is a Bill promoted by the gas companies; they are to pay the expenses of the Bill?—I have told you the way in which it was introduced; that the Metropolitan Board of Works had a Bill before Parliament, and that the companies and the Metropolitan Board of Works came together to the Board of Trade.

338. Is not this Bill promoted by the gas companies, and are they not to pay the expenses of it?—Certainly not; it is not promoted by the gas companies exclusively; the gas companies pay the expenses of this and all other matters connected with these subjects.

339. Did the gas companies pay the expenses of the Metropolitan Gas Bills?—No, I presume not; but the Government would not feel themselves justified in saddling the expense of promoting this Bill upon the public exchequer.

340. Then this Bill is promoted in the interests of the gas companies?—Nothing of the kind.

Mr. *T. H. Farrer.*

27 July 1876.

341. But they are to pay the expenses of it?—That is quite another thing.

342. Then they pay for a Bill which is not promoted in their interests?—They pay out of funds which they levy upon the public.

343. And therefore the greater the necessity for watching over the expenditure of those funds?—Certainly, you cannot be too vigilant.

344. What are the data upon which you found the proposed capital given to the Phœnix Company?—I have given you my answer, and that is all I can say. It was an arrangement, as I have told you, of the Metropolitan Board of Works, representing the consumers. The Metropolitan Board of Works would naturally be the persons to go into the question of the raising of capital on the part of the gas companies; and the Metropolitan Board of Works were satisfied that this capital was wanted.

345. And that is the whole information upon which you ask the House of Commons to authorise the raising of this capital of 150,000 *l.* at 10 per cent.?—That is the whole information that I have to give upon this subject, coupled with what I said about the Auction Clauses.

346. I may put the same questions to you with regard to the other companies?—Certainly.

347. You do not know what capital is wanted or has been expended; you do not know the rate of increase and the state of the works, and all those various matters?—I do not; you may save yourself a good deal of trouble.

348. May I take your answers with respect to the Phœnix Company to apply to all the other companies?—Yes.

349. You said yesterday that you considered that great advantage would accrue from uniformity; what are the advantages which are to accrue from uniformity?—That one system of gas supply should prevail throughout the metropolis is, I think, a thing which of itself is an advantage; one illuminating power, one mode of testing that illuminating power, one mode of controlling the action of the companies, and one price throughout the metropolis.

350. Then whatever are the circumstances, although we have pointed out to you that a difference exists as between 3 *s.* 9 *d.* and the 2 *s.* 8 *d.* which might be charged by the South Metropolitan Company, you still think that the 3 *s.* 9 *d.* should be observed?—I have given you my reasons for taking the 3 *s.* 9 *d.*, and I do not know that I can give you anything more.

351. Although at the present time one company charges 4 *s.*, and up to a very recent period charged 4 *s.* 2 *d.*, and another is charging 3 *s.*, you still think that there should be an amalgamation?—I think it very desirable that the price of the company which is charging 4 *s.* should be reduced.

352. Do you think it very desirable that the price of the company which is charging 3 *s.* should be elevated?—I think it much better to have uniformity throughout the district.

353. Would you think so if you had to pay 3 *s.* 9 *d.* instead of 3 *s.*?—If I was in the district which pays 4 *s.*, I should think so.

354. Can you tell us what other advantage, except the name of uniformity, is to flow from adopting a uniform price when the absolute prices are so divergent?—I think that one of the great causes of discontent throughout the metropolis has been the difference of price.

355. Where is the discontent on the difference of price?—I have heard plenty of it at the Board of Trade, and the absurdity of having one price on the north side of Oxford-street, and another on the south side.

356. And, therefore, you promote amalgamation?—No, the reason why Mr. Cardwell's Committee promoted amalgamation was that they thought that by amalgamation the companies would be able to produce gas cheaper, and more conveniently.

357. Has that been found to be the result of amalgamation?—I think that it is very difficult to say what has been the result of amalgamation.

358. From your study of the question, have you found that gas has been supplied cheaper by the amalgamations on the north side of the Thames?—No, and for this reason, that the companies on the north side had to incur the expense of very large works out of town, which has in a very considerable degree disturbed the matter.

359. And, therefore, you say that those disturbing causes which make 3 *s.* 9 *d.* necessary on the north should apply to the south, although they do not exist there?

there?—On the south you have some prices much higher than the prices on the north.

360. And you have 3 *s.*, which is very much lower?—Yes.

361. With respect to the amalgamation on the northern side, do you know the prices which were charged by the first companies which were amalgamated with the Chartered Company?—No; if I did know I have forgotten.

362. Do you know what the first companies were?—I cannot, at this moment, remember.

363. You remember the City Company and the Great Central Company?—Yes, but I do not remember the names of the companies.

364. Do you know that at the time of the amalgamation one of them was earning 16 per cent., and that the whole of that was swallowed up by the amalgamation?—No.

365. Do you know that the Equitable Company was absorbed into the Chartered Company?—Yes.

366. Do you know the result of it?—No.

367. Do you know that it resulted in a loss to the consumer of two and a half per cent.?—No.

368. Do you know what the result of the amalgamation of the Western Company was?—No.

369. When you promote here an amalgamation on the part of the Board of Trade you know nothing of the data in order to furnish the Committee with results of amalgamation on the northern side?—In promoting amalgamation we have acted upon the decisions of Parliament with respect to amalgamation, and upon the general presumption that amalgamation is likely to enable companies to carry on their works more conveniently and cheaper.

370. Are you aware of the evidence which was given by Mr. Livesey upon the very last inquiry, namely, that amalgamation had resulted disastrously to the consumers on the northern side?—No, I am not.

371. Then you have not read the evidence which was given on the South Metropolitan Bill of this year?—No, I have not.

372. What is the advantage which you think is going to accrue by amalgamation on the south side?—I think, from everything that I have heard, that the result of amalgamation on the south side would be to give to the whole of the south 16-candle gas at the price of 3 *s.* 4 *d.*

373. Then why do you put 3 *s.* 9 *d.* into the Bill; why do you not reduce the initial price to 3 *s.* 6 *d.*, which is all that I ask?—I should be very glad indeed, in the interest of the consumer, if the initial price for all the companies were 3 *s.* 6 *d.* instead of 3 *s.* 9 *d.*

374. Are you prepared to assent to 3 *s.* 6 *d.*; if so, our opposition is at an end?—That is in the hands of the Committee. The Board of Trade are bound by the arrangement between the Metropolitan Board of Works and the companies.

375. Then see what position you place yourself in. What are the data upon which you arrive at 3 *s.* 4 *d.*?—From what I have heard in conversation.

376. But that does not furnish me with any information?—But then I know very well that the sliding scale will make it the interest of the companies to charge as low a price as possible.

Chairman.] We should like just to withdraw for a few minutes.

The Committee retired, and after an interval returned into the Committee-room.

Chairman.] It is very late in the Session, and I hope that counsel and parties interested will understand that we are not merely considering our own convenience, and I hope not principally considering that, but that we are considering that the very lateness of the Session will make legislation difficult if it was to be a very long inquiry, and therefore we came to the conclusion that if we could suggest any possible agreement, it might be as well to do it at the first opportunity, and even to do it when everybody would understand that we are merely suggesting it as a possible agreement without committing ourselves to what would be our decision if we had to go into the whole investigation, and therefore we throw out this suggestion; whether it would be possible for all parties to agree upon these two things:

27 July 1876.

the inclusion of the South Metropolitan Company, and the fixing of the initial price at 3 *s.* 6 *d.* instead of 3 *s.* 9 *d.* I was only going to say that if, as I suppose, especially from the remarks made by Mr. Michael lately, it would remove the opposition from the vestries, and secondly, if that could be accepted, we should then be in a position, and, I suppose, we could come to an almost immediate conclusion, leaving for consideration the clauses upon matters in detail. If that be not so, it appears to me that we should have to enter into a very considerable and lengthened inquiry. I think we should have to decide in our own minds with regard to these four questions. First, whether, considering there has been a Committee upon the South Metropolitan Bill which has decided 3 *s.* 6 *d.*, it would be right for us to attempt to fix a different price for the South Metropolitan, and to fix the price at 3 *s.* 9 *d.* Secondly, supposing that we came to the conclusion that we could not do that, whether we could for the public advantage proceed with a Bill of which the object is ostensibly for the purpose of amalgamation with the very great difficulty thrown in the way of amalgamation of a different price for the South Metropolitan, or of its exclusion altogether.

But there would be two other questions of very great importance, and probably requiring even a longer inquiry than those first two, and that is, whether or no 3 *s.* 6 *d.* would or would not be a reasonable price for the companies south of the Thames, and that would bring up a further and most difficult question which reminds me of what we had to do last year, which would be whether the question of price was not re-opened altogether, and whether we should not have to take into account the circumstances of this year, and could not be altogether guided by the circumstances of last year. We should have to take into account the present cost of making gas, and the present alteration in the prospect of that cost whatever it be; that is to say, we should have to consider what would be the proper initial price. I think that those four questions would require us to examine several witnesses, because we are not in the position of a private Bill in which we must take merely those witnesses that are brought before us; we have to consider the interests of the general public, and I think we should have to suggest that witnesses should be brought before us. It would be for the promoters of the Bill and for all parties interested to consider whether, if some such agreement as that which I have suggested was not come to, it would be possible for the inquiry to be concluded in time for legislation this year; I do not know whether counsel would like to consult, say, for half an hour.

Mr. *Clerk.*] It is a matter so much more for the companies than for the Board of Trade, who are at the present time promoting this Bill to decide in a question of this kind; of course, we have acted in this matter, as you know, because the Metropolitan Board of Works, considering that they were attending to the interests of the consumers, had agreed to certain things; how far the companies could agree to any alterations in the initial price is, of course, a matter upon which we can express no opinion; we have adopted certain prices as those which we considered were governing on the north side of the river, and were reasonable ones to adopt upon the south. There is one question which has been raised by my learned friends in opposition with reference to the form of this Bill, as introduced, with regard to which, if the companies raise no objection, so far as the South Metropolitan Company is concerned, the operation of the Bill might be confined to the 61st Clause only with regard to amalgamation, leaving therefore all the questions affecting the initial price not determined upon at all with regard to the South Metropolitan Company, but leaving it to be a matter of arrangement hereafter, when some scheme of amalgamation would be proposed to the Board of Trade, with regard to which, as you know from a good deal that was said yesterday, the Metropolitan Board of Works receive notice, and appear as observers and complainers, and taking their view as to a modification of anything proposed in this scheme before the Board of Trade. But the effect of that will be not to make this Bill in the slightest degree in antagonism to that which was to a certain extent passed by Mr. Walter's Committee, although now pending in the other House of Parliament, continuing the initial price for the South Metropolitan

27 July 1876.

Metropolitan at 3 *s.* 6 *d.*, that would not be interfered with. The whole definition in the Bill with regard to the 3 *s.* 9 *d.* price would affect the other three companies with regard to whom there may be a reduction of price.

Chairman.] Am I to understand from that, that the result of an arrangement, supposing it was made upon that ground, would be that the companies would all four amalgamate with 3 *s.* 6 *d.* for the South Metropolitan, and 3 *s.* 9 *d.* for the others.

Mr. *Clerk.*] They would have to submit that question so far. Of course, as the Bill stands, you know any two or more of the companies may, under this, submit an amalgamation scheme; this is not an amalgamation Bill amalgamating the four companies, but giving them the power to go before the Board of Trade with a scheme of amalgamation, and any two or more of them may do it.

Chairman.] Then I think I must ask this question, which I was wanting to have asked if we had proceeded with the inquiry. Is there an agreement amongst the counsel as to what would be the legal position? Supposing that the Bill is passed without the introduction into the Preamble of the South Metropolitan Company, but merely with the possibility of the 61st Clause, would the Board of Trade be able to assent to an amalgamation in which the initial price for the South Metropolitan Company was fixed at 3 *s.* 9 *d.*, notwithstanding the present Act, or notwithstanding the present Bill, which I suppose in that case ——

Mr. *Clerk.*] I take it there is no doubt that would be so; of course it would be entirely subject to the control of the body to whom has been confided the interest of the consumer, namely, the Metropolitan Board of Works.

Chairman.] What is the opinion of counsel?

Mr. *Michael.*] As I understand the matter, it is 3 *s.* 9 *d.*

Sir *Mordaunt Wells.*] I understand my learned friend does not hesitate to say now 3 *s.* 9 *d.*

Chairman.] I do not ask for an argument, but is it agreed that the Board of Trade would be able to assent to an amalgamation in spite of the present Act which is in force, or if the present Bill of the Lords was passed in spite of that Bill, take either one of those things which would certainly happen, would the Board of Trade be able to assent to an amalgamation of 3 *s.* 9 *d.*, in the teeth of those Bills?

Mr. *Clerk.*] Certainly.

Sir *Mordaunt Wells.*] My learned friend says certainly. We have now before us the representative of the very tribunal which is to determine this question of amalgamation, and therefore we are no longer in the dark, and we have the positive assurance of that gentleman that he can amalgamate upon the principle of 3 *s.* 9 *d.*

Chairman.] I do not think you catch my question; I am not asking for the opinion of the Board of Trade, much as I would respect it; I ask whether there is an agreement upon the law of the matter, whether the power being given by the Bill which is now brought forward for amalgamation upon conditions to be settled by the Board of Trade, that would give a power to settle the amalgamation upon conditions contrary to the maximum price which is fixed by Act of Parliament by any particular company?

Mr. *Michael.*] As far as I am concerned, I am not prepared to answer the question; it is too difficult to answer off-hand. I will not commit myself; I only know what the representative of the Board of Trade said, and he told you that he has power to do so; in spite of the 3 *s.* 6 *d.* he could enforce 3 *s.* 9 *d.* In the face of that, and seeing that the courts are extremely unwilling to deal with a department of the Government,

27 July 1876.

although they may have stretched the power, I am afraid to express any opinion, but I am very much afraid what the practical issue will be.

Sir *Mordaunt Wells.*] May I remind you that in 1872 this very question was before Parliament; the South Metropolitan came to amalgamate with the Phœnix, and then I had the honour of appearing on behalf of the vestries, who contended that it was a dangerous principle to allow two companies to amalgamate, one having a particular price, and the other another. And therefore we threw out that Bill upon the ground that it was a dangerous thing that such an opportunity should take place.

Chairman.] Then, I think, Mr. Clerk, that that does not very much remove our difficulties, because supposing the promoters were to so far modify their alteration as merely to leave the 61st Clause, and not to put in the South Metropolitan——

Mr. *Clerk.*] Except named specifically in that clause.

Chairman.] One of these two things would happen; either power would be given to the Board of Trade to amalgamate upon the principle of 3 *s.* 9 *d.*, and then my first question would still have to be decided by us, because it would be the same thing really fixing directly the price at 3 *s.* 9 *d.*, and giving a power which we understood would be used for 3 *s.* 9 *d.*

Witness.] Would you put it *might* be used.

Chairman.] Might be used, or the Board of Trade might come to a different conclusion; in that case my second question would still come in force, which is, whether it would be desirable in the public interest to pass a Bill with the great object of amalgamation with the difficulties in the way of amalgamation of either the exclusion of the South Metropolitan, or the fixing of a different price. I am afraid that what you have just said does not very much shorten the inquiry if the agreement could not be come to.

Mr. *Clerk.*] I was answering, as nearly as I could, what I thought would be the result of confining this Bill to that which Mr. Farrer said he thought it should be, merely giving the power directly of amalgamation with the South Metropolitan, and then you were so good as to call our attention to this; what would be the effect of such a simple power of amalgamation; would it enable the Board of Trade to give an uniform price, though the one had an initial price of 3 *s.* 6 *d.* and the other a 3 *s.* 9 *d.* initial price. My answer to that was, that under the powers of the general legislation passed upon that subject, the Board of Trade would have that power.

Mr. *Venables.*] I appear with my learned friend Mr. Richards upon separate petitions for the three companies, and upon another Petition for the South Metropolitan. Of course, their interests are not identical in this matter, and what I wish to say is, that I am afraid it is almost impossible for me to answer immediately, or even with a very short consultation with my two bodies of clients the first questions which you put, that it would require a lengthened consideration of the matter. As to the question of the power of the Board of Trade, I should say with my learned friend, Mr. Michael, that I am not at this moment prepared to answer it confidently, and I am the more unwilling to express a confident opinion, because if that opinion should turn out to be wrong of course it would bind nobody. It is evident that we are not altogether agreed, at least that we are none of us prepared to express a confident opinion as to what the Board of Trade might do. I would remind the Committee of what I daresay is in their minds, that under the existing Acts the Chartered Company can by consent amalgamate with the South Metropolitan, or with any of those other companies; what I meant was by agreement with those companies. I was going to add that it would come under the consideration of the Board of Trade who would sanction such a scheme as they thought proper. The scheme in all cases, either under the present Bill if it were passed, or under the

27 July 1876.

the Chartered Act, must begin with the amalgamating companies; therefore it is necessary to take into consideration what they would be likely to propose, as well as what the Board of Trade would be likely to sanction. The Board of Trade cannot compel them to amalgamate, though it may suggest modifications within their original scheme, which they may adopt if they think proper. But, practically, what I would ask you is, to allow us till to-morrow to consider the point. I do not know whether your statement which you made, though it was as clear as possible, it was necessarily not very short, is in writing.

Chairman.] No. I can quite understand that we could hardly expect an immediate answer. I am very well aware that the companies would have to be consulted in this matter. Now, then, I think we will do whatever is most convenient. We would proceed with the understanding that that is left for consideration, and we would adjourn. There is a disadvantage in losing any time.

Mr. *Venables.*] It would probably be better for my learned friend, Mr. Michael, to complete his cross-examination of Mr. Farrer.

Mr. *Michael.*] I do not intend after what you have said to proceed with the cross-examination of Mr. Farrer.

Sir *Mordaunt Wells.*] I do not intend to ask any questions.

Chairman.] Counsel will see the reason why I made the statement so early, that I wanted to show that we could not have made up our minds upon any point.

The parties consulted together.

Mr. *Venables.*] I am afraid it would be impossible to come to any decision; I am speaking for the companies, and I understand Mr. Farrer to say that the Board of Trade would also require some time for consideration, and, therefore, I am afraid we can do nothing more to-day, though I am very sorry to lose the time.

Friday, 28th July 1876.

THE RIGHT HONOURABLE WILLIAM EDWARD FORSTER, IN THE CHAIR.

28 July 1876.

Mr. *Venables.*] SIR, on behalf of the three Companies whom I represent on one Petition, that is, the Phœnix, the Surrey Consumers, and the London, I wish to state to the Committee the conclusion at which they have arrived. They had certainly thought that it was exceedingly desirable, having come with some difficulty to an arrangement with the Metropolitan Board of Works, which was approved by the Board of Trade, to settle this litigation once and for all. I need not refer now to the circumstances under which the South Metropolitan Company was more specially included in the original Bill. I am now speaking only on behalf of the three companies whom I have mentioned, and I will now ask you, Sir, to look at the report of your observations yesterday at page 32, which no doubt is accurate.

Chairman.] I have it before me.

Mr. *Venables.*] The first paragraph refers principally to the South Metropolitan Company. I am not speaking at present on behalf of the South Metropolitan Company, but you proceed to say in the second paragraph, "But there would be two other questions of very great importance, and probably requiring even a longer inquiry than those first two, and that is, whether or no 3 *s.* 6 *d.* would or would not be a reasonable price for the companies south of the Thames, and that would bring up a further and most difficult question which reminds me of what we had to do last year, which would be whether the question of price was not re-opened altogether, and whether we should not have to take into account the circumstances of this year. We should have to take into account the present cost of making gas, and the present alteration in the prospect of that cost whatever it be; that is to say, we should have to consider what would be the proper initial price. I think that those four questions would require us to examine several witnesses, because we are not in the position of a private Bill in which we must take merely those witnesses that are brought before us; we have to consider the interests of the general public, and I think we should have to suggest that witnesses should be brought before us. It would be for the Promoters of the Bill, and for all parties interested, to consider whether if some such agreement as that which I have suggested was not come to." There, Sir, I may say that I am not quite certain what the agreement was, for I thought that the agreement which you suggested in the first place referred only to the South Metropolitan Company.

Chairman.] No; I do not think my words bear out that. I meant the inclusion of the South Metropolitan, and the fixing of the initial price of 3 *s.* 6 *d.* instead of 3 *s.* 9 *d.*

Mr. *Venables.*] I thought in the first paragraph you were speaking of the initial price for the South Metropolitan Company.

Chairman.] No; I am sorry if I was so misunderstood. I certainly never meant that for a moment. I meant by what I said, the fixing of the initial price in the Bill.

Mr. *Venables.*] For the whole of the companies?

Chairman.] Yes; and then I went on to say that if that was not done we should have to consider the two questions of the Bill that had been passed by the South Metropolitan Company, and also the possibility of passing a Bill to put the South Metropolitan Company in a different position. I clearly understood that it was 3 *s.* 6 *d.* for the whole of the companies.

Mr.

28 July 1876.

Mr. *Venables.*] Thank you, Sir, Then to finish what I was reading, "to consider whether, if some such agreement as that which I have suggested was not come to, it would be possible for the inquiry to be concluded in time for legislation this year?—Now, Sir, the three companies for which I am at this moment appearing, have taken this very seriously into consideration, and I may say in the first place that they are not prepared to enter into any agreement as to reducing the initial price to 3 *s.* 6 *d.* That being so, they understand from your statement that the Committee are of opinion that if the Bill proceeds it would be proper to go into this inquiry, which, as you, Sir, very properly suggested, might render it doubtful whether it would be possible for the inquiry to be concluded in time for legislation this year. The three companies have formed their opinion upon the best advice, that if such an inquiry was proceeded with, it would not be possible to obtain legislation this year, and, consequently, that the labour and expense would be wasted. That being the case they apply now, through me, to the Board of Trade to withdraw the Bill which the Board of Trade introduced, on the understanding that all parties whom they took into consideration were consenting to it. With regard to the South Metropolitan it is unnecessary to say anything, because, of course, if the Bill is withdrawn, it does not matter what the South Metropolitan say or do in the matter; they have no power to compel the Bill to be proceeded with, and, therefore, they naturally follow the fate of the other companies. The other companies, for the reason I have mentioned, thinking it impossible, in the present circumstances, that there should be legislation this year, do not wish the Board of Trade to proceed any further with the Bill.

Chairman.] Before Mr. Clerk says anything I should be glad to say a word or two. What I am now going to say must be understood to be entirely without prejudice to what might have been our decision upon the questions if we had gone into them; but we are anxious, if possible, that this Committee should not separate without a conclusion being come to with regard to these disputed questions, which are not merely to be measured by this year, but which have been going on for some time, and, therefore, we think it our duty to make one other suggestion as to a possible agreement, and in doing that I must again repeat that we are not expressing any opinion as to what might have been the result if we had gone on with the inquiry. I understood that the three companies would not consent to an initial price of 3*s.* 6*d.* in place of 3*s.* 9*d.* The suggestion I wish on behalf of the Committee to make is this: whether the Promoters, the Companies, and the other opponents could agree upon this proposition:—That the initial price, instead of being fixed at 3*s.* 9*d.* or at 3*s.* 6*d.*, should be from 3*s.* 6*d.* to 3*s.* 9*d.*; that a rise in the dividend should not take place unless the price was lowered below 3 *s.* 6 *d.*; and that a deduction from the dividend should not take place unless the price should have risen above 3 *s.* 9 *d.* I do not know whether, if we separated for half an hour, that could be accepted; or whether it is possible that the opponents might at once come to the conclusion that they could not accept it. Of course, I do not profess to be quite ignorant of the question, having examined into it a good deal last year, but all I wish to say for my own part is this, that it appears to me that the effect of that proposition would in all probability be that the consumers would get the gas at once at a lower price than 3 *s.* 6 *d.*, because I imagine that it could be supplied at less than 3 *s.* 6 *d.*, and that there would be a strong temptation to the companies to do so. I do not know whether it is worth while to leave the matter in your hands, but perhaps if we were to retire into the other room for a quarter of an hour you might be able to tell us.

Mr. *Venables.*] I do not know whether my learned friends, Sir Mordaunt Wells and Mr. Michael, can give an answer to that.

Sir *Mordaunt Wells.*] The proposition which has emanated from the Chair now assumes the form of a kind of double sliding scale.

Chairman.] I should not apply that adjective to it.

Sir *Mordaunt Wells.*] I mean, Sir, that the difficulty that would arise in reference to the working of such a principle would really, when looked into, amount almost to that; that it would have that operation. We, on the part of the consumers, that is to say, on the part of the gas consumers, have always consistently maintained that the lowest prices which the southern consumers ought

28 July 1876.

to pay is 3 *s.* 6 *d.*; and most respectfully we should decline to accept any proposition that would in any way interfere with that simple demand that we respectfully make, namely, that the price charged by the whole of the companies on the south should be fixed at 3 *s.* 6 *d.*

Chairman.] Then, I understand that this notion has occurred to you, and you have consulted your clients about it.

Sir *Mordaunt Wells.*] Yes, Sir; I have been in consultation with my learned friend, Mr. Michael, and we are both of us in accord that we ought not, in any way whatever, to consent to anything that will enable the companies to have an initial price higher than 3*s.* 6*d.*; that, Sir, is our view, and that is the view upon which we have advised our clients. We are not taken at all by surprise, and I feel myself now as competent, most respectfully, to give an answer to that proportion as I should be to-morrow.

Mr. *Michael.*] Will you allow me to add one or two words: you must remember, Sir, that 3 *s.* 6 *d.* is not what we have argued for; but the compromise at which we had arrived of 3 *s.* 6*d.* was the price we argued for, and if I may venture to so call it, the shifting sliding scale, which you have suggested, would as much destroy the compromise of 3 *s.* 6 *d.* as the other thing, much more so; you never could tell what the initial price would be, and therefore I most strongly advise my clients not to assent to the proposition.

Chairman.] I do not wish to argue the matter as to this proposition. I am not saying at all, and I should be very sorry if anybody supposed that that would be the proposition we should have made; if we had had the whole question brought before us, possibly it would not; I am only throwing it out as a possible means of agreement. But as regards uniformity the same price would be charged, of course, if such a proposition had been accepted by all the companies south of the Thames.

Mr. *Michael.*] Quite so; but the principle we listened to yesterday, and endeavoured without effect to comprehend, on the part of Mr. Farrer, was this: that it was extremely desirable, in the interest of the metropolis, that an uniform price should prevail over the whole of the metropolis, irrespectively of the division made by the River Thames.

Mr. *Venables.*] My learned friends have no veto upon this proposal; all they can say is that they oppose it; they have no power to reject it. Therefore, Sir, as you have been kind enough to offer us this proposition, I ask for a short time to consider it on behalf of the companies.

Chairman.] We are very anxious to come to an agreement if possible, and I think we will adjourn for a quarter of an hour; but we must say that unless it were to be an agreement all round it would be of no use.

Mr. *Michael.*] That is quite out of the question, Sir.

Mr. *Venables.*] If that is so, there is no use, probably, in adjourning.

Chairman.] We will adjourn for a few moments.

The Committee retired, and in a short time returned.

Chairman.] I do not know whether you may think that we are rather over anxious to come to an arrangement in this matter, but we are in this position, that we have before us a Bill presented by the Imperial Government, and supported by the Local Government of London, and, of course, we felt it our duty to hear the vestries; but I trust they will not consider it unreasonable for me to say that the Bill does come before us with very considerable support. Before Mr. Venables says anything with regard to this proposition, I would ask the counsel for the opponents this further question: Supposing the companies to assent to the sliding scale being suspended from 3 *s.* 6 *d.* to 3 *s.* 9 *d.*, and supposing that the opponents are not prepared to assent to that; if that meant a lengthened inquiry, I think we should all feel there would be no use in going into it, but we should be prepared to go on, if the counsel for the opponents would be content with addressing us as against such a proposition, and then leaving it to a decision; I must beg the counsel to believe that we have in no way

28 July 1876.

way pledged ourselves in our own minds to any decision at all, and that we should give the fullest hearing to anything that was said.

Mr. *Cripps.*] Sir, on behalf of the Metropolitan Board I wish to say this. Of course, as you have seen, my case has been rather a watching case, and, to a great extent, a neutral one. The Metropolitan Board were favourable to the Bill as introduced, but, upon consideration of the proposal which the Committee have now made, for a sliding scale, not moving at all, from 3 *s.* 9 *d.* to 3 *s.* 6 *d.*, that is a proposition they have considered, and they are aware of the effect of it. You do not desire me now to argue why we should object to that, but we should most decidedly object to it.

Chairman.] Then I think that settles the matter.

Mr. *Cripps.*] You do not expect me to go into the matter, I presume, but you may assume that I could show you reasons why we should be justified in objecting to it.

Mr. *Michael.*] I am exactly in the same position. I do not enter into the merits, but I have an answer which I am quite sure in three minutes would prove to you that instead of its enuring to the benefit of the vestries, as has been suggested, it would really be postponing any benefit which they might derive indefinitely.

Mr. *Clerk.*] You are aware, Sir, that the Board of Trade merely introduced this Bill, I may say, at the request and for the convenience of parties who were really interested in the matter, entirely to carry out the views of the Metropolitan Board of Works, as we believed, representing the whole of the public, on the one hand, and the companies on the other. Now, Sir, unless the two bodies can present to this Committee some points upon which they can agree, our position of course is altered, and we are no longer promoting a Bill in agreement between the parties as we thought we were when we introduced it, and the Bill will be entirely altered. Under these circumstances, the Board of Trade will have nothing to do if the parties do not agree to any of the suggestions which have been made by the Committee, but not to proceed further with this Bill. With regard to the Metropolitan Board of Works, consisting of a number of about 28, of whom I think there are nine who are representatives on the southern side of the Thames ——

Mr. *Cripps.*] I do not think that my learned friend ought to go into any question about the Metropolitan Board of Works now.

Chairman.] I think, if we have got the conclusion of the Metropolitan Board, we might let the matter rest.

Mr. *Clerk.*] Very well, Sir. Of course we are here simply to carry out, as I observed yesterday, what we believed both parties, namely, the Metropolitan Board of Works, representing the consumers, and the companies were agreed upon. If differences arise between them which they are not able to settle, our position is changed, and it would be idle for us to go further with the Bill, and therefore we have nothing to do but to withdraw it. But allow me to say that there are two matters which Mr. Farrer is anxious to explain.

Chairman.] Just let me say one word before Mr. Farrer comes into the chair, which I say, not as Chairman of this Committee, but as having taken a great deal of interest in the matter, and having had to pay a good deal of attention to it last year. I should like the parties interested to understand that I do not think the proposition for suspending it for 3 *d.* is one I should, probably, have come to after hearing the whole case; it would have required a very strong argument to induce me to do so; and I merely suggested it as a possible agreement which might be come to, and I was induced to do so by the great advantages which I thought an agreement might bring about. I should be sorry that it should be supposed that I was particularly in favour of that proposition. I only put it forward as not affecting any very large range of price, but as a possible ending of the discussion.

Mr. *Michael.*] Before Mr. Farrer goes into the chair, just remember the position of matters. I was stopped in the middle of my cross-examination, the

28 July 1876.

Bill is withdrawn, and Mr. Farrer is going to say something, I have no doubt of great importance, or which he thinks of great importance, to influence some future legislation.

Mr. *Clerk.*] Surely, as a matter of courtesy, my learned friend will allow Mr. Farrer to give an explanation.

Chairman.] I understand that Mr. Farrer wishes to correct some mistake in his evidence.

Sir *Mordaunt Wells.*] If it is to correct evidence which appears on Messrs. Gurney's notes, any witness has a right to be called to explain it.

Chairman.] I think we must limit Mr. Farrer to explanation.

Mr. *Thomas Henry Farrer*, re-called; and Examined as follows:—

Mr. *T. H. Farrer.*

377. Mr. *Clerk.*] I BELIEVE you wish to give some explanation with reference to evidence you gave yesterday?—My object is to explain and supplement the evidence which I gave yesterday.

Chairman.] I think we must limit you to explanation.

Witness.] I think what I am going to say is explanation; you will correct me if it is not. I did not give a positive opinion upon the points raised yesterday with respect to the amendments made in the Bill; I have since consulted Sir Charles Adderley, and I wish to state that it is, or I should rather say now it was, the intention of the Board of Trade, that the Bill should be so framed as to make it possible to effect an amalgamation of the southern companies, if, on consultation with the Metropolitan Board and the Companies, such a step should appear to be for the benefit of the metropolis; and in the event, and for the purpose of such amalgamation, to apply to the South Metropolitan Company the legislation adopted for the other southern companies. The other point I wished to explain was my answer to the question whether allowing capital to be raised at ten per cent. rather than at seven per cent. would not be an advantage to the shareholder rather than to the consumer.

Mr. *Michael.*] No such question was asked you; I studiously avoided asking you any such question.

Chairman.] I think if you refer to the answer you gave, and you wish to give another answer in its place because the other was not clear, we ought to accept it.

Mr. *Michael.*] I studiously avoided drawing any comparison between the benefits accruing to the consumers and the benefits accruing to the shareholders. Read any question of mine that bears upon the matter, or refer me to the answer you gave.

378. *Chairman* (to the *Witness*).] If you will refer me to the answer you gave we will consider whether we can accept your explanation?—There are several; Question 283 is one of them: "Do you represent that the Auction Clauses do not inure to the benefit of the shareholders already existing in the concern?" I say they do not, and I say that there is a great deal more to be said on this point than I said yesterday.

Mr. *Michael.*] How does that affect the matter in any way?

Chairman.] I think the best way will be this. The answer that Mr. Farrer gives to that question is, "Yes; I mean to say that the thing will be sold at its market price." Now if Mr. Farrer will say what answer he wishes to substitute, I will hear you, Mr. Michael, if you object to it.

Mr. *Michael.*] I am perfectly content, Sir.

Witness.] The answer I wish to give is this: I say that the Auction Clauses do not inure to the benefit of the shareholders already existing in the

the concern, and for this reason: the Auction Clauses give 10 per cent. Now 10 per cent. has been objected to as giving them a greater benefit than 7 per cent., and what I say is, that with the Auction Clauses it does not make the least difference as between the shareholder and the consumer whether the statutory dividend is 10 per cent. 7 per cent., or 5 per cent.

Mr. *Michael.*] It is too absurd an arithmetical proposition altogether.

Chairman.] I think your arguing against it as being absurd is hardly a reason why you should object to the explanation.

Mr. *Michael.*] I object to his going into this matter. If Mr. Farrer says that he misapprehended any question, or did not answer it as he intended, he has a right to explain what he meant; but if he is going into the examination again, in this *ex parte* way, and bringing in a matter which I never questioned him about at all, I do object. I have nothing to do with the consumers. I am merely treating it as an arithmetical question as to the benefit to the shareholders.

Mr. *Clerk.*] This is the first time, in my experience, that I ever knew a counsel object, as a matter of courtesy, to an explanation being given.

Mr. *Michael.*] I have examined Mr. Farrer simply with reference to one point, namely, the influence that this matter would have upon the shareholders.

379. *Chairman* (to the *Witness*).] Will you just finish your answer?—Assume that your shares are at 100 per cent. premium, and assume further that you require two millions of capital for new works ——

380. *Chairman.*] I really think this is going too far. We have concluded the inquiry, and I do not think you ought to bring fresh reasons before us. If you mean to say that when you said, "I mean to say that the thing will be sold at its market price," you stated that which was incorrect, I think you might in a very few words say something in place of it; but I do not think you ought to enter into an argument in support of your opinion?—Then I shall be quite content to add to the answer to Question 285, which stands thus: "That shows me that you have not considered the Auction Clauses; do you wish the Committee to understand that the action of the Auction Clauses in raising 150,000 *l.* at 10 per cent. will not inure to the benefit of the present shareholders?—No, I do not think that it will;" on the fullest reflection, I am satisfied that with the Auction Clauses it will not make the slightest difference to the interest of the existing shareholders whether the dividend is 10 per cent., 7 per cent., or 5 per cent.

Chairman.] We will accept that alteration.

REPORT

FROM THE

SELECT COMMITTEE

ON THE

METROPOLIS GAS (SURREY SIDE) BILL;

TOGETHER WITH THE

PROCEEDINGS OF THE COMMITTEE.

AND

MINUTES OF EVIDENCE.

Ordered, by The House of Commons, *to be Printed*, 28 *July* 1876.

[*Price 7 d.*]

384.

Under 6 *oz.*

REPORT

FROM THE

SELECT COMMITTEE

ON

METROPOLITAN FIRE BRIGADE;

TOGETHER WITH THE

PROCEEDINGS OF THE COMMITTEE,

MINUTES OF EVIDENCE,

AND APPENDIX.

Ordered, by The House of Commons, *to be Printed,*
20 *July* 1876.

371.

Tuesday, 21*st March* 1876.

Ordered, THAT a Select Committee be appointed to inquire into the constitution, efficiency, emoluments, and finances of the Metropolitan Fire Brigade, and into the most efficient means of providing further security from loss of life and property by fire in the Metropolis.

Friday, 31*st March* 1876.

Ordered, THAT the Committee do consist of Twenty-one Members.

Committtee nominated of—

Sir Henry Selwin-Ibbetson.
Mr. Stevenson.
Mr. M'Lagan.
Mr. Clifton.
Mr. Kinnaird.
Sir Henry Peek.
Sir Andrew Lusk.
Lord Lindsay.
Mr. Herbert.
Mr. Fielden.
Marquis of Tavistock.
Mr. Onslow.
Mr. Hayter.
Mr. Forsyth.
Mr. Hankey.
Sir William Fraser.
Mr. Young.
Mr. Locke.
Mr. John Stewart Hardy.
Sir James Hogg.
Mr. Ritchie.

Ordered, THAT the Committee have power to send for Persons, Papers, and Records.

Ordered, THAT Five be the Quorum of the Committee.

Thursday, 27*th April* 1876.

Ordered, THAT Mr. Fielden be discharged from further attendance on the Committee.

Ordered, THAT Mr. Hardcastle be added to the Committee.

REPORT - - - - - - - - - - - - - p. iii
PROCEEDINGS OF THE COMMITTEE - - - - - p. iv
MINUTES OF EVIDENCE - - - - - - - - - p. 1
APPENDIX - - - - - - - - - - - - p. 598

REPORT.

THE SELECT COMMITTEE appointed to inquire into the CONSTITUTION, EFFICIENCY, EMOLUMENTS, and FINANCES of the METROPOLITAN FIRE BRIGADE, and into the most efficient Means of providing for the Security from Loss of LIFE and PROPERTY by FIRE in the METROPOLIS;—— HAVE considered the matters to them referred, and have agreed to the following REPORT:—

YOUR Committee have examined many Witnesses upon the matters referred to them, but as it will not be in their power to conclude their investigation in the present Session, they have agreed to Report the Evidence which they have taken to the House, with an Appendix; and they recommend that the Committee be re-appointed in the next Session of Parliament.

20 *July* 1876.

PROCEEDINGS OF THE COMMITTEE.

Friday, 7th April 1876.

MEMBERS PRESENT:

Sir Henry Selwin-Ibbetson.	Mr. Hayter.
Mr. Herbert.	Sir Andrew Lusk.
Mr. Kinnaird.	Mr. Stevenson.
Mr. Onslow.	Mr. Locke.
Sir James Hogg.	Marquis of Tavistock.
Mr. Forsyth.	Sir Henry Peek.
Mr. Ritchie.	Mr. Clifton.
Mr. Young.	Lord Lindsay.

Sir HENRY SELWIN-IBBETSON was called to the Chair.

The Committee deliberated.

[Adjourned till Thursday, 27th April, at Twelve o'clock.

Thursday, 27th April 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Sir James Hogg.	Mr. Locke.
Mr. Herbert.	Mr. Forsyth.
Mr. Clifton.	Mr. M'Lagan.
Sir Henry Peek.	Mr. Hankey.
Lord Lindsay.	Mr. John Stewart Hardy.
Mr. Onslow.	Mr. Kinnaird.
Mr. Ritchie.	Mr. Stevenson.
Marquis of Tavistock.	Mr. Hayter.

Mr. *Godfrey Lushington* and Captain *Shaw* were severally examined.

[Adjourned till Monday next, at Twelve o'clock.

Monday, 1st May 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Mr. Ritchie.	Mr. M'Lagan.
Mr. Onslow.	Mr. Forsyth.
Lord Lindsay.	Mr. Locke.
Sir Henry Peek.	Mr. John Stewart Hardy.
Mr. Clifton.	Mr. Hayter.
Sir James Hogg.	Mr. Herbert.
Mr. Young.	Mr. Hankey.
Mr. Hardcastle.	Sir William Fraser.

Mr. *Godfrey Lushington* and Captain *Shaw* were further examined.

[Adjourned till Thursday next, at Twelve o'clock.

Thursday, 4th May 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Mr. Ritchie.	Mr. Locke.
Mr. Hankey.	Marquis of Tavistock.
Mr. Onslow.	Sir Andrew Lusk.
Sir Henry Peek.	Mr. Herbert.
Mr. Clifton.	Mr. Forsyth.
Sir James Hogg.	Mr. M'Lagan.
Mr. Hayter.	Mr. Young.
Mr. John Stewart Hardy.	Sir William Fraser.
Mr. Hardcastle.	

Captain *Shaw* was further examined.

[Adjourned till Monday next, at Twelve o'clock.

Monday, 8th May 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Lord Lindsay.	Mr. Forsyth.
Sir Henry Peek.	Mr. Onslow.
Mr. Clifton.	Mr. Locke.
Sir James Hogg.	Mr. Hardcastle.
Mr. Young.	Mr. Ritchie.
Mr. Hayter.	Mr. Hankey.
Mr. John Stewart Hardy.	Marquis of Tavistock.
Mr. M'Lagan.	Sir William Fraser.

Captain *Shaw* was further examined.

William Hamlyn was examined.

[Adjourned till Thursday next, at Twelve o'clock.

Thursday, 11th May 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Mr. Ritchie.	Mr. Hardcastle.
Mr. Onslow.	Mr. Forsyth.
Sir Henry Peek.	Marquis of Tavistock.
Mr. Clifton.	Sir Andrew Lusk.
Sir James Hogg.	Mr. Hankey.
Mr. Hayter.	Mr. Locke.
Mr. John Stewart Hardy.	Mr. Stevenson.

William Port, George Duck, George Bull, John T. Kelly, James Morris, George Whittwer, and *Duncan F. Fitzmaurice,* were severally examined.

Adjourned till Thursday next, at Twelve o'clock.

Thursday, 18*th May* 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Mr. Ritchie.	Sir Andrew Lusk.
Mr. Onslow.	Mr. M'Lagan.
Sir Henry Peek.	Mr. Forsyth.
Mr. Clifton.	Mr. Locke.
Sir James Hogg.	Mr. Herbert.
Mr. Hayter.	Lord Lindsay.
Mr. John Stewart Hardy.	Mr. Hardcastle.

Mr. *Harry De la Hooke* was examined.

[Adjourned till Monday next, at Twelve o'clock.

Monday, 22*nd May* 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Mr. Ritchie.	Mr. Hankey.
Mr. Onslow.	Mr. John Stewart Hardy.
Sir Henry Peek.	Mr. Young.
Mr. Clifton.	Mr. M'Lagan.
Mr. Herbert.	Mr. Forsyth.
Sir James Hogg.	Marquis of Tavistock.
Mr. Hayter.	Mr. Locke.

Mr. *Harry De la Hooke* was further examined.

[Adjourned till Thursday next, at Two o'clock.

Thursday, 25*th May* 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Mr. Ritchie.	Sir Andrew Lusk.
Sir Henry Peek.	Mr. Herbert.
Mr. Clifton.	Mr. John Stewart Hardy.
Sir James Hogg.	Mr. Stevenson.
Mr. Hankey.	Mr. M'Lagan.
Mr. Hardcastle.	

Mr. *Harry De la Hooke* was further examined.

[Adjourned till Monday next, at Twelve o'clock.

Monday, 29*th May* 1876.

MEMBERS PRESENT:

Mr. Henry Selwin-Ibbetson in the Chair.

Mr. Ritchie.	Mr. Forsyth.
Mr. Onslow.	Mr. Young.
Mr. Herbert.	Mr. Hankey.
Sir Henry Peek.	

At the meeting of the Committee a letter was read from Sir James Hogg stating that in consequence of the death of his father he was unable to attend the Committee this day.

[Adjourned till Monday, 12th June, at Twelve o'clock.

Monday, 12*th June* 1876.

MEMBERS PRESENT:

Sir Henry Selwin-Ibbetson in the Chair.

Mr. Ritchie.	Mr. Hayter.
Mr. Onslow.	Mr. Herbert.
Sir Henry Peek.	Mr. Hankey.
Sir James Hogg.	Lord Lindsay.
Mr. John Stewart Hardy.	Mr. Locke.
Mr. M'Lagan.	Mr. Hardcastle.
Mr. Forsyth.	

Mr. *Robert Freeman* was examined.

[Adjourned till Thursday next, at Twelve o'clock.

Thursday, 15*th June* 1876.

MEMBERS PRESENT:

Sir Henry Selwin-Ibbetson in the Chair.

Mr. Ritchie.	Mr. Hardcastle.
Sir Henry Peek.	Mr. M'Lagan.
Mr. Clifton.	Sir Andrew Lusk.
Sir James Hogg.	Mr. John Stewart Hardy.
Mr. Hankey.	Mr. Locke.
Mr. Hayter.	

Mr. *Robert Freeman* and Mr. *Guildford B. Richardson* were severally examined.

[Adjourned till Monday next, at Twelve o'clock.

Monday, 19*th June* 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Mr. Ritchie.	Mr. Hardcastle.
Mr. Forsyth.	Mr. Hankey.
Lord Lindsay.	Mr. John Stewart Hardy.
Sir Henry Peek.	Mr. Onslow.
Mr. Clifton.	Mr. Hayter.
Sir James Hogg.	

Mr. *G. B. Richardson* was further examined.

[Adjourned till Thursday next, at Twelve o'clock.

Thursday, 22*nd June* 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Mr. Ritchie.	Mr. M'Lagan.
Mr. Onslow.	Mr. Forsyth.
Sir Henry Peek.	Sir Andrew Lusk.
Mr. Clifton.	Mr. Hayter.
Sir James Hogg.	Mr. John Stewart Hardy.
Mr. Hankey.	Mr. Hardcastle.

Mr. *G. B. Richardson* was further examined.

Room cleared.—Committee deliberated.

Mr. *G. B. Richardson* was further examined.

Mr. *Edward J. Thompson* was examined.

[Adjourned till Monday next, at Twelve o'clock.

Monday, 26*th June* 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Mr. Forsyth.	Mr. Young.
Mr. Ritchie.	Mr. Hardcastle.
Sir Henry Peek.	Sir James Hogg.
Mr. Locke.	Mr. Clifton.
Mr. John Stewart Hardy.	Mr. Hayter.
Mr. Hanky.	

Mr. *Edward J. Thompson* was further examined.

Mr. *Arthur Gunn* was examined.

[Adjourned till Thursday next, at Twelve o'clock.

Thursday, 29th June 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Mr. Ritchie.	Mr. Hayter.
Mr. Onslow.	Mr. Hankey.
Lord Lindsay.	Sir Andrew Lusk.
Sir Henry Peek.	Mr. Hardcastle.
Mr. Clifton.	Mr. Forsyth.
Sir James Hogg.	Mr. Locke.

Sir *Joseph Bazelgette* and Mr. *Frederick J. Bramwell* were severally examined.

[Adjourned till Monday next, at Twelve o'clock.

Monday, 3rd July 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Mr. Ritchie.	Mr. Young.
Mr. Onslow.	Mr. Forsyth.
Sir Henry Peek.	Mr. Hardcastle.
Sir James Hogg.	Mr. Hankey.
Mr. Clifton.	Sir Andrew Lusk.
Mr. Hayter.	Mr. Stevenson.
Mr. John Stewart Hardy.	

Mr. *F. J. Bramwell* was further examined.

Mr. *Edward Easton* was examined.

[Adjourned till Thursday next, at Twelve o'clock.

Thursday, 6th July 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Mr. Ritchie.	Mr. M'Lagan.
Mr. Onslow.	Mr. Forsyth.
Sir Henry Peek.	Mr. Hardcastle.
Mr. Hankey.	Sir James Hogg.
Mr. John Stewart Hardy.	Sir Andrew Lusk.

Mr. *George Shaw* and Mr. *George W. Lovell* were severally examined.

[Adjourned till Monday next, at Twelve o'clock.

Monday, 10*th July* 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Mr. Onslow.	Mr. Hankey.
Sir Henry Peek.	Mr. Young.
Mr. Clifton.	Mr. John Stewart Hardy.
Sir James Hogg.	Mr. Ritchie.
Mr. M'Lagan.	Mr. Locke.
Mr. Hardcastle.	Mr. Hayter.
Mr. Forsyth.	

Mr. *George W. Lovell* was further examined.

Mr. *Henry R. Tomkinson* and Mr. *Alfred Tozer* were severally examined.

[Adjourned till Thursday next, at Twelve o'clock.

Thursday, 13*th July* 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Mr. Ritchie.	Mr. Forsyth.
Mr. Onslow.	Sir James Hogg.
Sir Henry Peek.	Mr. Locke.
Mr. John Stewart Hardy.	Mr. Stevenson
Sir Andrew Lusk.	Mr. Hayter.

Mr. *William Swanton* and Mr. *T. H. G. Berrey* were severally examined.

[Adjourned till Monday next, at Twelve o'clock.

Monday, 17*th July* 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Mr. Ritchie.	Mr. John Stewart Hardy.
Mr. Onslow.	Mr. M'Lagan.
Sir Henry Peek.	Mr. Forsyth.
Sir James Hogg.	Mr. Hayter.
Mr. Clifton.	Mr. Stevenson.
Mr. Hankey.	

Mr. *Richard C. Yelland*, Colonel *Henderson*, and Captain *Harris* were severally examined.

[Adjourned till Thursday next, at Twelve o'clock.

Thursday, 20*th July* 1876.

MEMBERS PRESENT:

Sir HENRY SELWIN-IBBETSON in the Chair.

Mr. Ritchie.	Mr. Forsyth.
Sir Henry Peek.	Mr. Locke.
Sir James Hogg.	Mr. Clifton.
Mr. Hankey.	Sir Andrew Lusk.
Mr. John Stewart Hardy.	Mr. Hardcastle.
Mr. Hayter.	Mr. M'Lagan.

Captain *Harris* and Captain *Shaw* were severally examined.

The Committee deliberated.

DRAFT REPORT read the first and second time, and *agreed to*.

Ordered, To Report, together with Minutes of Evidence, and an Appendix.

EXPENSES OF WITNESSES.

NAME OF WITNESS.	Profession or Condition.	From whence Summoned.	Number of Days absent from Home, under Orders of Committee.	Allowance during Absence from Home.	Expenses of Journey to London and back.	TOTAL Expenses allowed to Witness.
				£. s. d.	£. s. d.	£. s. d.
Mr. Alfred Tozer - -	Superintendent of Fire Brigade, Manchester.	Manchester - -	2	2 2 –	2 12 –	4 14 –
Mr. R. C. Yelland - -	Superintendent of Salvage Corps, Liverpool.	Liverpool - -	2	2 2 –	3 2 –	5 4 –
Ditto . - - - -	ditto - - -	ditto - - -	2	2 2 –	3 2 –	5 4 –
Mr. T. H. G. Berrey -	Civil Engineer	Manchester - -	2	6 6 –	2 12 –	8 18 –
				TOTAL - - - £.		24 – –

LIST OF WITNESSES.

Thursday, 27*th April* 1876. PAGE

Mr. Godfrey Lushington - - - - 1
Captain Eyre Massey Shaw - - - 9

Monday, 1*st May* 1876.

Mr. Godfrey Lushington - - - - 29
Captain Eyre Massey Shaw - - - 36

Thursday, 4*th May* 1876.

Captain Eyre Massey Shaw - - - 63

Monday, 8*th May* 1876.

Captain Eyre Massey Shaw - - - 93
Mr. William Hamlyn - - - - 120

Thursday, 11*th May* 1876.

William Port - - - - - - 129
George Duck - - - - - - 142
George Bull - - - - - - 147
John Kelly - - - - - - 150
James Morris - - - - - - 155
George Wittwer - - - - - 162
Duncan Fitzmaurice - - - - 163

Thursday, 18*th May* 1876.

Mr. Harry De la Hooke - - - - 165

Monday, 22*nd May* 1876.

Mr. Harry De la Hooke - - - - 197

Thursday, 25*th May* 1876.

Mr. Harry De la Hooke - - - - 225

Monday, 12*th June* 1876.

Mr. Robert Freeman - - - - 242

Thursday, 15*th June* 1876.

Mr. Robert Freeman - - - - 277
Mr. Guildford Barker Richardson - - 293

Monday, 19*th June* 1876. PAGE

Mr. Guildford Barker Richardson - - 312

Thursday, 22*nd June* 1876.

Mr. Guildford Barker Richardson - - 345
Mr. Edward John Thompson - - - 365

Monday, 26*th June* 1876.

Mr. Edward John Thompson - - - 375
Mr. Arthur Gunn - - - - - 395

Thursday, 29*th June* 1876.

Sir Joseph William Bazalgette - - 406
Mr. Frederick Joseph Bramwell - - 425

Monday, 3*rd July* 1876.

Mr. Frederick Joseph Bramwell - - 429
Mr. Edward Easton - - - - 447

Thursday, 6*th July* 1876.

Mr. George Shaw - - - - - 460
Mr. George William Lovell - - - 471

Monday, 10*th July* 1876.

Mr. George William Lovell - - - 491
Mr. Henry Richard Tomkinson - - 507
Mr. Alfred Tozer - - - - - 515

Thursday, 13*th July* 1876.

Mr. William Swanton - - - - 525
Mr. T. H. G. Berrey - - - - 552

Monday, 17*th July* 1876.

Mr. Richard Collins Yelland - - - 560
Lieut.-Colonel Edmund Yeamans Walcott Henderson, C.B., R.E. - - - - 572
Captain William Charles Harris - - 580

Thursday, 20*th July* 1876.

Captain William Charles Harris - - 588
Captain Eyre Massey Shaw - - - 596

MINUTES OF EVIDENCE.

Thursday, 27th April 1876.

MEMBERS PRESENT:

Mr. Clifton.	Lord Lindsay.
Mr. Forsyth.	Mr. Locke.
Mr. Hankey.	Mr. M'Lagan.
Mr. John Stewart Hardy.	Mr. Onslow.
Mr. Hayter.	Sir Henry Peek.
Mr. Herbert.	Mr. Ritchie.
Sir James Hogg.	Mr. Stevenson.
Mr. Kinnaird.	Marquis of Tavistock.

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

Mr. *Godfrey Lushington*, called in; and Examined.

Mr. *G. Lushington.*
27 April 1876.

1. *Chairman.*] You are the Counsel for the Home Office?—Yes.

2. Has your attention been drawn to the appointment of this Committee?—Yes, I have been asked to prepare to give evidence. I can only give a mere summary of the legal history of the brigade.

3. Are you acquainted with the Act under which the brigade was first established in the metropolis?—Yes; the Act by which the Metropolitan Fire Brigade was established was the 28 & 29 Vict. c. 90. It has been in operation since the 1st of January 1866. Section 4 declares that from that date "the duty of extinguishing fires and protecting life and property in case of fire shall within the metropolis be deemed for the purposes of the Act to be entrusted to the Metropolitan Board of Works; and with the view to the performance of that duty, it was to be lawful for them to provide and maintain an efficient force of firemen, and to furnish them with all such fire engines, hoses, accoutrements, tools, and implements as might be necessary for the complete equipment of the force or conducive to the efficient performance of their duties." The force superseded the parochial arrangements which had previously existed under the statutes of the 14 Geo. 3, c. 78, and the 3 & 4 Will. 4, c. 90, the Lighting and Watching Act, s. 44. The latter Act I may say was optional; it had to be adopted by the parishes. The fire brigade also superseded a fire brigade which had before that been voluntarily instituted by the insurance companies.

4. And that had succeeded, had it not, the fire brigade by the parishes?—No; the two were concurrent.

5. What authority is the fire brigade under?—That of the Metropolitan Board of Works.

6. Is it limited in area?—It is limited in area to the metropolis, by which is meant the City, and the parishes and places outside the City under the jurisdiction of the Metropolitan Board. I may say that the area is a much smaller area than that of the metropolitan police district, and it is a smaller area than the area supplied by the various water companies of London.

7. Are there any powers under which the fire brigade can be sent outside that area?—Yes, there are special powers, and in that case a charge may be made upon the owner and occupier of the house to which the engines are sent; and

Mr. *G. Lushington.* 27 April 1876.

also the Board may perform special services on terms settled by special agreement.

8. Either with private persons or with public bodies?—I believe with either, but I am not quite sure as to that. It is Section 30 of 28 & 29 Vict. c. 90, which is the authority which enables the Board to perform special services.

9. Could you give the Committee the sources of revenue of the Metropolitan Fire Brigade?—Yes, there are three main sources. The Treasury are authorised to contribute a sum, not exceeding 10,000 *l.* a year, by the 18th section of the Fire Brigade Act; then the insurance companies insuring property in the metropolis are bound to make a contribution at the rate of 35 *l.* in every million on the gross amount assured; that is under the 13th section of the same Act. Then the third, and the principal source, is the rates. The ratepayers of the metropolis, that is to say, of the City, and the area subject to the Board outside the City, pay a halfpenny in the pound, levied by the consolidated rate. This contribution is now fixed by the Metropolitan Board Loans Act, 32 & 33 Vict. c. 102, s. 22. Then, besides these three, there are two subordinate sources of revenue. The first is the penalties from the occupiers of houses or buildings where chimneys are on fire (that is under Section 23 of the Fire Brigade Act); and, secondly, there are the payments for the special services rendered beyond the metropolitan limits. Those are the sources of revenue, but, in addition to that, the Board were enabled, with the consent of the Treasury, to create Consolidated Stock, to any amount, for "the purpose of providing" (these are the terms of the Act) "station-houses, fire-engines, fire-escapes, and permanent plant for the purpose of the Fire Brigade Act.

10. What section of the 33rd Victoria is that?—That is the 32 & 33 Vict. c. 102, s. 36. I may say that the monies for the payment of interest on and for the redemption of the Consolidated Stock are not charged to the fire brigade revenue.

11. What are they charged to?—They are paid out of the consolidated rate.

12. What are the powers given to the Metropolitan Board over the brigade?—They have complete powers over the brigade for the purpose of the Act. I may specify them. By Section 5 they may acquire land by purchase.

13. Is that compulsory purchase?—No; there does not appear to be a power to purchase by compulsion. By the same section they may contract for the establishment of telegraphic communication; by Section 11 they may make arrangements as to fire-escapes, and that, I believe, they have done. They commenced by purchasing the fire-escapes from the Royal Society for the Prevention of Loss of Life from Fire. Then, by Section 7, the Board has complete control over the head officer, and all the men of the brigade, appointing and dismissing them at pleasure.

14. Can they fix the salaries?—Yes, by Section 8 the Board fixes all the salaries. Then by the same section the Board has power to make such regulations as they think fit as to compensation to the men for accidents, as to their wives and families in case of death, and as to gratuities to the firemen, and gratuities to persons giving notice of fires, and gratuities to the turncocks. Then by Section 9 the Board has also power to make penal regulations to maintain the discipline of the brigade. These penal regulations, however, must be made subject to the consent of the Secretary of State. I believe no such regulations have ever been made; it has not been found necessary or expedient.

15. What powers, under the Act, have the brigade themselves?—The fire brigade, when it attends at the breaking out of a fire, have very large powers indeed. The chief, or the officer in charge, may take any measure that appears expedient for the protection of life and property. The fire brigade may break through, and take possession of or pull down any premises for the purpose of putting an end to the fire.

16. Is that under the same section?—That is under Section 12 of the Fire Brigade Act. Any damage which is occasioned by the fire brigade in the execution of their duties is declared to be damage by fire within the policy of insurance. Then they may remove any person who interferes with them in their operations whilst the fire is going on.

17. With respect to the Volunteer Fire Brigade, have you anything to state to the Committee?—I believe there are various volunteer fire brigades, but I have no special information as to them.

18. Have the Metropolitan Fire Brigade power to make use of such volunteer firemen?—

firemen?—They may make use of such volunteers, or of any other persons who voluntarily place themselves at their disposal. Mr. *G. Lushington.* 27 April 1876.

19. Are the police in any way instructed to aid the brigade?—Yes; the same Section 12 of the Fire Brigade Act declares that all police constables shall be authorised to aid the fire brigade in the execution of their duties. The Commissioner of Police has issued general orders on this subject.

20. Have you a copy of those orders?—Yes, I have, if the Committee would like to have a copy. This is one of a large number of general orders, but I can supply a special copy of it. I think, perhaps, it will not be necessary to read this general order; it is rather a long one.

21. Can you state generally what powers the police have in aid of the suppression of fire?—By the Act "they may close any street in or near which a fire is burning, and they may of their own motion, or on the request of the chief or other officer of the fire brigade, remove any persons who interfere, by their presence, with the operations of the fire brigade."

22. Have the Metropolitan Fire Brigade any direct power over the water companies during the time of fire?—Yes, certainly.

23. What are they?—In the first place, they may exercise all the powers as to fire-plugs or hydrants which were formerly exercisable by the local authority. I have not ascertained exactly what those powers are, but I believe no question arises concerning them; and that, when a fire breaks out, the water companies, by means of their turncocks, place all their resources, at least such as may be available at the time and place, fully at the disposal of the fire brigade.

24. Are they bound to supply them with any plans of their mains?—Yes, that is a most important point. When a fire breaks out, of course the first question is, Where is the water to be had from; and as the sources are underground, it is necessary to have a map, and the water companies are bound to keep maps at their principal offices. By the Fire Brigade Act, the Metropolitan Board is entitled to receive a copy of those underground plans; and on these plans are also to be marked with what are called the screw-cocks, which will be explained by competent persons. But I believe that although the fire brigade have the powers formerly exercisable by the local authority with regard to fire-plugs, and although they may also shut off the water from the mains and pipes of the district, and no water company is liable in consequence of their so doing, practically, the fire brigade have to depend entirely upon the turncocks. That, of course, will be explained to the Committee by competent persons.

25. Is there anything in the Act stating who is bound to supply the plugs and hydrants?—Yes; the water company is bound to supply the plugs and hydrants, but at the expense of the Board of Works; and the brigade has full power to use the plugs and hydrants.

26. Under what Act is that?—That is under two enactments. Section 32 of the Fire Brigade Act (it is rather long and a little complicated), and an amending section of another Act (34 & 35 Vict. c. 113, s. 34), which I will also read. Section 32 of the Fire Brigade Act is, "All the powers now exercised by any local body or officer within the metropolis as respects fire plugs" (you observe the word fire-plugs, because by the amending section it is made to include hydrants, &c.) "shall henceforth be exercised by the Board, and the Board shall be entitled to receive copies or extracts of all plans" (and the meaning of the word plans is enlarged by another enactment, 34 & 35 Vict. c. 113, s. 49, "kept by any water company under the provision of the Act of the Session of the 15th and 16th years of Her Majesty, chapter 84, and every such water company shall provide at the expense of the Board in any mains or pipes within the metropolis plugs" (that is subject to the same remark) "for the supply of water in case of fire at such places of such dimensions and such form as the Board may require, and the fire brigade shall be at liberty to make such use thereof as they may deem necessary for the purpose of extinguishing any fire; and every such company shall deposit keys of all their fire-plugs and such places as may be appointed by the Board, and the Board may put up on any house or building a public notice in some conspicuous place in each street in which a fire-plug is situated, showing its situation."

27. Mr. *J. S. Hardy.*] As I understood you, you said that the company were bound to supply those plugs, and so on, but as I understand that clause they are bound to supply such plugs as the Board may direct?—Certainly.

28. Not others?—No, not others. But that Act is amended by the Metro-

Mr. *G. Lushington.* 27 April 1876.

polis Water Act of 1871, 34 & 35 Vict. c. 113, s. 34, which is to the following effect:—"Section 32 of the Metropolitan Fire Brigade Act of 1865 shall operate, subject and according to the provisions following; that is to say: (1.) In that section and in this provision the term 'fire-plug,' and the term 'plug,' shall include hydrant and all other apparatus necessary or proper in connection with the companies' pipes for supply of water in case of fire; (2.) Where a company give a constant supply in any part of their water limits, they may, if they think fit, give notice thereof to the Metropolitan Board of Works; (3.) If the Metropolitan Board of Works do not, within two months after receipt of any such notice, specify, as regards that part of the company's water limits, what plugs for supply of water in case of fire, at what places, of what dimensions, and in what form they require the company to provide, then, at any time after the expiration of that time the company may, if they think fit, provide in and for that part of their water limits such plugs for supply of water in case of fire, at such places, of such dimensions, and in such form as to the company seem necessary or proper; (4.) Thereupon, as regards that part of the company's water limits, the company shall be deemed to have fully discharged all obligations imposed on them by the said Section 32; (5,) All plugs provided by a company in pursuance of this provision may, for the purposes of the fire brigade, be used as if they had been provided on the requisition of the Metropolitan Board of Works under the said Section 32; (6.) The providing of plugs by a company under this provision shall be at the expense of the Metropolitan Board of Works, and the cost, charges, and expenses of the company, in or about the providing of the same, shall be paid to the company by the Metropolitan Board of Works on demand, out of their general rate, and in default may be sued for and recovered with costs by the company in any court of competent jurisdiction for the recovery of any ordinary simple contract debt of the like amount."

29. The result of those two clauses is then that the companies must supply any hydrants or other matters which they are compelled to do by the Board of Works, and they may supply any other that they think necessary?—A company is only authorised to supply at the expense of the Board what the company thinks necessary, in case the Metropolitan Board of Works have not made any requisition.

30. Sir *James Hogg.*] That is only when the companies lay down new or additional mains, not when they are merely altering or re-arranging old ones; for instance, if a company pulled up a main, and put another in its place, it could not be called upon to affix hydrants?—This is only where a water company gives a constant supply in any part of their water limits.

31. Mr. *J. S. Hardy.*] Then where there is not a constant supply the water company has no power to lay down any plugs that are not required by the Board of Works?—No, certainly not at the expense of the Board.

32. Mr. *Ritchie.*] I do not understand that as simply applicable to laying down new mains, but as applicable to old mains where the constant supply is given?—Yes, wherever the constant supply is given, whether the mains are new or old.

33. Mr. *J. S. Hardy.*] But where there is no constant supply the Board would have no power to require the provision of any extra hydrants?—The company is not bound to provide plugs except they are required by the Board.

34. Sir *James Hogg.*] That is under the constant supply?—No, a constant supply is not a necessary condition. Under Section 32, "Every such water company shall provide at the expense of the Board in any mains or pipes within the metropolis plugs for the supply of water," &c.

35. *Chairman.*] That is under the Fire Brigade Act?—Yes.

36. Mr. *Ritchie.*] In fact it comes to this, as I understand, that where there is not a constant supply the Metropolitan Board of Works can compel the placing of hydrants if they think fit?—Certainly, but at the expense of the Board.

37. Where there is a constant supply the water companies can give notice that there is a constant supply, and then ask for those hydrants or plugs to be put in, and if they are not put in by the Metropolitan Board then the water companies can put them in themselves, and make the Metropolitan Board pay for it?—Yes, that is correct.

38. Sir *James Hogg.*] May I ask you to explain to the Committee where it is laid down that throughout the whole of London where there is no constant supply

supply the Metropolitan Board of Works are to order hydrants to be put down? —That is so; the Metropolitan Board of Works I said have power to order. "Every such water company shall provide at the expense of the Board in any mains or pipes within the metropolis." I said that the Board have power to require that under Section 32 of the Fire Brigade Act.

39. That is if they want any alteration?—Certainly.

40. Not otherwise?—No, not otherwise.

41. If they think that the plug is sufficient, things may remain as they were? —Yes; but then it must be recollected that the Metropolitan Board of Works are charged with the duty of extinguishing fires and protecting life and property in case of fire within the metropolis.

42. Mr. *Ritchie.*] I understand that the word fire-plug in this Section 32, is by the amending section made to include hydrants?—It is.

43. *Chairman.*] Do you know anything with regard to the establishment of the salvage corps as affecting this subject?—By the Fire Brigade Act if the insurance companies establish a force of men charged with the duty of attending fires and saving assured property, then it is the duty of the fire brigade, with the sanction of the Board, and subject to any regulations to be made by the Board, to afford the necessary assistance to that force in the performance of their duties.

44. Mr. *Forsyth.*] Is that by Act of Parliament?—Yes, by the Fire Brigade Act, Section 29, upon the application of any officer of the salvage corps, the brigade are to hand over to his custody the property that may be saved from fire, and the fire brigade may make no charge for such services.

45. *Chairman.*] Those are all the Acts, are they not, with regard to the establishment of the Metropolitan Fire Brigade and its working at present, with the exception of the Water Acts?—Yes, I believe so.

46. Can you give the Committee the Water Acts which apply?—There are only two Acts on the subject of water supply relating to the metropolis; the Act of 1852 and the Act of 1871, namely, the 15 & 16 Vict. c. 84, and the 34 & 35 Vict. c. 113.

47. The Act of 1852 did not refer, of course, to the Metropolitan Board?— No, certainly not; it could not have done so.

48. Did it to any other local authority?—No, not to any other local authority.

49. What were its principal provisions, and how do they affect this subject? —First of all, as to its area. Its area is described in the Schedule. I presume that is the area served by the water companies, but I am not quite certain as to that.

50. It does not state it in the Act?—No, the limits are set out in the Schedule, but the provisions of the Act of 1852 are now chiefly important with respect to the quality of the supply. The Act prohibited the intake of water below Teddington Lock, and also contained provisions for facilitating the constant supply, but the latter provisions were never acted upon, and they are now superseded by the Act of 1871. It was this Act which provided for a map of the underground works, to be made and kept at the principal office of each company. There is also a provision respecting the regulations, which perhaps had better be considered under the second Act.

51. Mr. *Onslow.*] What is the name of the Act of 1871?—They are both called Metropolis Water Act, one of 1852, the other of 1871.

52. *Chairman.*] The Act of 1871 is Chapter 113 of the 34th and 35th of Victoria?—Yes, the Metropolis Water Act. The Act of 1871 dealt with the same area as the Act of 1852, but it expressed the area in rather different terms, and the Act of 1871 did lay certain duties upon various local authorities.

53. What were the local authorities mentioned in the Act?—The local authority for the City was the Corporation, and for the rest of the metropolis as defined by the Metropolis Management Act, the Metropolitan Board; and then outside, the local authority was to be the Improvement Commissioners, if there were any, and, if not, the local board, and if no local board then the vestry.

54. And was the constant supply defined in the Act of 1871?—Yes.

55. How was it defined?—Under Section 7 the term constant supply means a constant supply of pure and wholesome water sufficient for the domestic purposes of the inhabitants within their water limits or within such parts of their

Mr. *G. Lushington.*

27 April 1876.

limits as they may be required to do, in order to make a constant supply, "constantly laid on at such pressure as will make such water reach the top storey of the highest houses within such water limits (but not exceeding the level prescribed by the special Act of such company)."

56. Did it give any power to the metropolitan authorities to enforce it?—Yes, it enables each of the authorities which are mentioned before, and which in the Act are defined as the metropolitan authorities, to require a constant supply from a company either for the whole of the district served by that company within the jurisdiction of the metropolitan authority, or in any part of it.

57. Was there any appeal, or was that final?—Yes, the Act also enabled any water company to propose to give a constant supply, and then whether the requisition came from the metropolitan authority or the proposal came from the company, if the two parties could not agree, the difference was to be referred by the Act to the Board of Trade; that is now the Local Government Board.

58. Had the central authority any power of themselves to enforce a constant supply?—Yes; by the 11th section power was given to the Board of Trade, that is now the Local Government Board, "to require a constant supply to be provided in any district by the company within the water limits of which such district is situate, upon complaint made, and in case it appears to such Board, after due inquiry, that the metropolitan authority refuses to make or unreasonably delays making application for such constant supply, or that by reason of the insufficiency of the existing supply of water in such district, or the unwholesomeness of such water, in consequence of its being improperly stored, the health of the inhabitants of such district is, or is likely to be, prejudicially affected."

59. Were there any powers in the Act limiting the application?—Yes; by the 10th section no company was to be compelled to provide a constant supply until the regulations referred to in the Act (the regulations as to the consumers' fittings), are in force, or if it appeared that more than one-fifth of the houses in the district were not provided with the prescribed fittings.

60. On whom does the cost fall?—The cost of the fittings falls upon the owner; but before I go to that I should point out that by another section, Section 15, the company are also not to be subject to any liability for not giving a constant supply, if the want of such supply arises from frost, unusual drought, or other unavoidable cause or accident.

61. With regard to the cost, what is the state of the case?—The cost of the fittings falls upon the owner, although they can be recovered from the occupier to the extent of the rent which is due from the occupier to the owner, and they can be provided, under Section 10 by the Metropolitan Board, and under Section 29 by a company giving a constant supply, and the expense recovered back from the owner or, to the extent above mentioned, from the occupier.

62. Are there any powers in the companies for the preventing of undue consumption of water?—Yes. That brings us to the subject of these regulations, and the existence of these regulations as to the consumer is made a condition of the constant supply.

63. That is not under the Act of 1871, is it?—No, not the regulations themselves; but the condition of the regulations being in force, is imposed by Section 10 of the Act now under consideration, the 34 & 35 Vict. c. 113. The original power to make regulations is contained in the Act of 1852, the 15 & 16 Vict. c. 84, s. 26, and perhaps it would be better that I should read the section.

64. Mr. *Forsyth.*] I see that Section 10 of the Act of 1871 says, "No company shall be compelled to give a constant supply to any premises in any district until the regulations provided for by this Act" are complied with?—Yes, but then under Section 17 of the same Act, "Every company shall within six months after the passing of this Act make regulations for the purposes for which regulations may be made under the authority of Section 26 of the Metropolis Water Act, 1852."

65. *Chairman.*] Those regulations are made by the companies?—Yes, those regulations are made by the companies.

66. Are they submitted to the metropolitan authority, whatever it is?—They are submitted to the metropolitan authority.

67. And they have to be confirmed, have they not, also after being submitted?

mitted?—Yes, they are not valid unless they are confirmed by the confirming authority, which is now the Local Government Board. That is by Section 22 of the 34 & 35 Vict. c. 113.

68. The metropolitan authority have powers, have they not, to be heard upon such inquiry?—Yes, they have a right to be heard; I may say that you will be informed by those who will tell you of the working and history of these Acts that proceedings have been taken under that section.

69. With regard to the Acts for the prevention of fires in the metropolis, can you give the Committee a history of those Acts; what do they consist of?—I think they may be thus classified: First of all there are the clauses imposing penalties upon careless persons with respect to fires; then there are the Metropolis Building Acts, the Explosives Act, and the Petroleum Act, and although there is no Act to that effect still the Committee probably would consider the expediency of any provisions, corresponding to those in Mr. M'Lagan's Fire Protection Bill, which was before the House for three successive years, requiring an inquiry into the origin of fires.

70. What are the penalties, and under which Acts are they?—The penal clause in the 14th of George the Third is now repealed by Section 34 of the Fire Brigade Act. By Section 23 of the Fire Brigade Act, to which I have already adverted, there is a penalty not exceeding 20 *s.* upon the occupier of any house or building in the metropolis where the chimney is on fire.

71. Are there any other penalties?—Not that I am aware of.

72. Have the insurance offices any power to spend money on buildings?—There is that power under Section 83 of the 14th of George the Third, chapter 78, but I am not aware that it is of much service. Then, as to the Building Acts, there are several Building Acts, and a list of them will be found in the memorandum which was circulated with a Bill introduced by the Metropolitan Board of Works consolidating all the enactments respecting metropolitan buildings in the Session before last, and last Session.

73. Can you give the Committee a list of the Acts?—You will find them all in the memorandum. The important Act to be considered is the 18 & 19 Vict. c. 122. That Act is a very long and complicated Act, and deals with building details, and I think the Committee will get the particulars much better from the qualified officers. Then the 32 & 33 Vict. c. 82, transfers to the Metropolitan Board the powers which the Commissioner of Police previously exercised with respect to dangerous structures; and the attention of the Committee should probably be called to that Bill which was introduced to consolidate the Metropolitan Building Acts, not only because the Bill contains a great many provisions with respect to the structure of buildings, but also because it contains provisions as to the storage of dangerous substances. It has not become an Act; it is only a Bill which has been twice before the House, and is a very important Bill.

74. There are certain Acts, the Explosives Act and the Petroleum Act, which do affect the fire question?—Yes; the Explosives Act is also an extremely elaborate and comprehensive Act. If the Committee desire information on that subject, I think the best source is this abstract of the provisions of the Act which was issued by the Home Office relating to the duties of the local authority under the Act (*delivering in the same*).

75. Both the Petroleum Act and the other Act which you have referred to were gone into very fully in the Committee of which Mr. M'Lagan was the Chairman, were they not?—Yes, as to the Petroleum Act, but the Explosives Act was only passed last Session.

76. Therefore that evidence would furnish the Committee with the state of things upon that subject?—Quite so.

77. Are there any other Acts which you would wish to mention to the Committee with regard to the metropolis?—No, there are no other Acts; the Fire Protection Bills, which were introduced by Mr. M'Lagan, opened up an important subject of inquiry with regard to fire.

78. Those were the results of that Committee?—Yes. With respect to the law applying to the country outside the metropolis, I may suggest that you may get evidence from the officers of the Local Government Board; they could give very important information upon that subject.

79. Mr. *Ritchie.*] In what way?—They can lay before the Committee the provisions of the Public Health Act relating to the prevention of fire in the

Mr. *G. Lushington.* provinces. The Public Health Act applies to urban and rural sanitary authorities; I have the provisions here if the Committee should wish to have them.

27 April 1876. 80. Do not those sanitary authorities have their own Acts of Parliament?—Some of them are, but there are those general Acts besides,

81. *Chairman.*] What I understand is, that the Local Health Act applies to the localities where there are no special Acts dealing with the subject?—They would apply to all the urban and rural sanitary authorities, except so far as they were overridden by special Acts.

82. Is there anything else with regard to the law affecting the establishment of the Metropolitan Fire Brigade, and its working in the metropolis, which you would wish to mention to the Committee?—No, I am not aware of anything further.

83. Mr. *Ritchie.*] Is it optional or compulsory under these Fire Brigade Acts to go outside the limits of the metropolitan authority?—It is optional. Section 30 says that it shall be lawful for the Board, when the occasion requires, to permit it.

84. Did I understand you to say that this Act gave power to the Metropolitan Board of Works to create any amount of stock for the purpose of building stations?—With the consent of the Treasury. Not this Act; it was the Metropolitan Board Loans Act, the 32 & 33 Vict. c. 102, s. 36.

85. Would not the Metropolitan Board of Works have to come to Parliament for powers to raise money?—I am bound to say that I am not posted up in the Act which was passed last Session. The Committee could get the information from another witness.

86. Mr. *Onslow.*] Can the Metropolitan Board charge just where they like outside their area in case of fire?—They can charge whatevat they think a reasonable charge, but in case of difference then the cost is to be summarily determined by two justices.

87. Is there anything in this Act which empowers the senior officer in case of a fire to take the general supervision and management when there are two or three engines out at the same time; does one officer take the control of them all?—That I suppose depends entirely on the authority with which Captain Shaw or the head officer is intrusted by the Metropolitan Board. I know nothing about that.

88. Mr. *Ritchie.*] What is the name of the Act?—It is the Public Works Loans Act. It is the Act which regulated the mode in which loans should in future be made by the Public Works Loans Commissioners of last Session.

89. Sir *James Hogg.*] The Metropolitan Board of Works have nothing whatever to do with the Public Works Loans Act; they go under their own special Loans Act?—I should be very happy to supply the Committee with the information upon this subject in the course of a day if it is thought necessary, or some other witness can supply it.

90. Mr. *Forsyth.*] The formation of a salvage corps is entirely optional with the insurance companies, is it not?—Yes.

91. If they do establish such a force, then the Metropolitan Fire Brigade is bound to afford them every assistance by Section 25?—Yes.

92. Sir *James Hogg.*] Will you be good enough to read the section in the Loans Act of last year which gives that power?—The Act from which I quoted was the Metropolitan Board of Works Loans Act of 1869, the 32 & 33 Vict. c. 102, s. 36.

93. Mr. *Ritchie.*] Have you got that Act before you?—Yes.

94. Will you be good enough to read the section?—"The Board may create Consolidated Stock for the purpose of raising, in addition to the loans authorised by the Acts mentioned in the first schedule to this Act" (amongst which is the Fire Brigade Act), "such further sums as the Treasury may sanction for the following purposes," which includes the purpose of providing station-houses, fire-engines, fire escapes, and permanent plant, for the purpose of the Fire Brigade Act.

95. Is there anything in that Act which compels application to Parliament?—No, there is not.

96. *Chairman.*] Then the Metropolitan Board can, under that section, raise the amount without applying to Parliament?—I think it would be better for the information to come from an officer of the Metropolitan Board of Works, for I do not pretend to be versed in all the Acts of the Metropolitan Board as to their loans.

loans. I will give the information at a later stage, if the Committee will allow me. Mr. *G. Lushington.*

97. Mr. *Ritchie.*] The Board by this Act are limited to a certain expenditure and a certain rate. If they are paying a rental out of their income for housing their men, they could have raised the money, according to that Act, and built stations, and have given those men houses, and thereby have saved 2,000 *l.* a year for other purposes?—There is no doubt whatever that the Board could create Consolidated Stock for that purpose in the same way as they could create Consolidated Stock for other purposes mentioned in the Act, with the consent of the Treasury. I am not aware that it was necessary to go to Parliament. I do not think it was, but I cannot speak positively about it at present. 27 April 1876.

98. *Chairman.*] You would rather look the subject up, and give the Committee the result of it at a later period?—Yes, certainly, that would be much more satisfactory.

Captain *Eyre Massey Shaw,* called in; and Examined.

99. *Chairman.*] You are in command of the Metropolitan Fire Brigade?—Yes. Captain *E. M. Shaw.*

100. How long have you been in command of that brigade?—Since the Metropolitan Fire Brigade was established.

101. That was in 1861, was it not?—No, I was previously in charge of the fire brigade of London, but it was a different establishment. I have been in charge of the fire brigade of London since the autumn of 1861, but the Metropolitan Fire Brigade was not in operation until the 1st of January 1866.

102. Can you give the Committee a sketch of the Metropolitan Fire Brigade as it existed previously?—The Metropolitan Brigade in the old times, as established before the year 1866, consisted of 38 fire-engines, 17 stations, two floating stations, and 131 men. That was the establishment as it was handed over in the year 1866.

103. And you have been in charge of that brigade since 1861?—Yes, since the autumn of 1861.

104. What was the authority then; was it a brigade established under the parishes, or by whom?—No, it was established by an association of insurance companies of London, embracing a large number of the insurance companies, but not all.

105. Was that the only means of extinguishing fires at that time in the metropolis?—Not the only means; it was the only organised means. One or two of the parishes had establishments of some utility, and a large number of parishes had little engines which were scarcely of any use, and a few private individuals had engines.

106. And by the Metropolitan Fire Brigade Act that was transferred to the Metropolitan Board of Works as the authority?—The duty of extinguishing fires was transferred.

107. Were those companies taken over by the Metropolitan Board of Works?—A part of the old establishment was handed over as a free gift, horses, stations, engines, and all the gear belonging to them.

108. Can you give the Committee an account of the present state of the brigade, showing how it has grown from that condition up to the present time?—Yes; the old establishment covered by its stations an area of about 10 square miles; about five from east to west by two from north to south, including all the most valuable parts of London by the river side. At present our duties extend over 121 square miles. Our greatest length, from east to west, is about 16 miles, and our greatest depth, from north to south, is about 12 miles; but the outline of our area is very irregular, so that the total quantity of mileage is not 12 by 16 miles. It is about 121 square miles, as nearly as can be calculated.

109. Your area at present is identical with the area of jurisdiction of the Metropolitan Board of Works?—Yes, that is the area over which we have jurisdiction.

110. What is the existing state of your force as to the number of engines compared with the old force?—They are very much increased from the old

Captain *E. M. Shaw.*

27 April 1876.

force. We have now 49 fire-engine stations on land and four on the river, making a total of 53. Besides that, we have 106 fire-escape stations, and we have a total of 111 engines on land and three on the river. As I have said, we have four river stations, but one of those engines which I have counted on land is always on duty on the river.

111. Mr. *Ritchie.*] You mean that it is a barge with an engine on it?—Yes; there are four stations and four engines, but one of those engines is an engine which I have already counted as a land engine.

112. *Chairman.*] What is the number of your men at present, as compared with the 131 men that you had before?—The total number now, including myself and superintendents and all ranks, is 398, if we were full.

113. On what principle are your stations arranged?—The whole of the metropolis is divided, as shown on the map on the wall, into four districts, called by the letters A, B, C, and D. Three of those districts are on the north side of the river, and one on the south. The districts on the north side are divided by lines of streets commencing, one at Charing Cross, and going upwards by Northumberland-street, Trafalgar-square Saint Martin's-lane, Crown-street, Tottenham Court-road, and Kentish Town-road, to the Highgate Archway-road; that divides the A and B District; the B and C Districts are divided by a line of streets commencing at London Bridge and passing by King William-street, Finsbury Pavement, City-road, New North-road, Newington-green, and Green Lanes to Upper Holloway. In the centre of each of those districts there is a superintendent who looks after the whole district, subject to orders from head quarters. He has a large number of stations under his control, with all of which he is connected by telegraph; and in addition to that he is also connected with the Head Quarter Station, or with the station which acts as the Head Quarter Station at Watling-street by telegraph.

114. On a fire breaking out, how does the information arrive at the stations?—The information comes by a stranger or a policeman, or in any other way to the station; it is then acted on by the officer of the station, and at the same time passed on to his superior.

115. That is how it is acted upon at the sub-station at which it first arrives?—Yes; if it comes to one of the outside stations the officer acts on his own judgment. As a rule he always proceeds to the fire, at the same time communicating with his superintendent, who sends on any further help that he thinks necessary; and at the same time communicating with the officer who acts at head quarters, and so the call is transmitted.

116. The stations are being connected by telegraph, are they not?—They are all connected by telegraph.

117. Does the superintendent of any district head station decide as to the requirements of the force?—Yes, as a rule the superintendent of the district does; and very often it is practically decided by the first man who receives the call whose intelligence about it is perfectly trustworthy, and that generally decides the superintendent as to the help which he will send on.

118. Do you think that that is a satisfactory way of arriving at a knowledge of what is necessary?—Yes; I think it is the most satisfactory way we can have.

119. Practically, has it worked well?—Practically, it works very well indeed.

120. It is not liable, is it, to throw away, if I may so call it, a force upon an insignificant fire?—No; and at the same time it is not liable to withhold aid where it is required. After the first officer, whatever rank he may hold, or the first man has reached a fire, he always sends a message back, and that practically decides the whole thing; he can tell at once whether very much help will be required, or only moderate help. He sends a message back from the fire; that is the first authentic message with regard to the brigade. A message from a stranger or the police is very often mistaken, but a message from our own men is never wrong.

121. A certain amount of valuable time elapses before you are really in possession of evidence on which you can rely?—Yes, really trustworthy evidence, but from practice we very seldom make a mistake; I do not know that there have been any mistakes ever made in that way.

122. How are your engines distributed among those stations?—The engines

are

are distributed throughout the various stations according to the requirements of the place, and according to the number of engines which we have.

123. You have divided your engines into manual and steam engines. Are the steam engines placed principally at the head stations, or how are they distributed?—There is only one station that has a second steam fire-engine; all the others that have steam engines have only one at the station, but practically at head quarters we profess to keep two, although we lend one out when there is one short anywhere else.

124. Mr. *Forsyth.*] Is the fire in those engines kept ready burning?—We have the water warm.

125. *Chairman.*] What time does it take generally to bring a steam-engine to bear upon any given fire?—It depends entirely upon the distance from the station. The first engine which arrives at a fire is never a steam fire-engine, if we can possibly avoid it. The steam fire-engines follow.

126. I suppose a manual engine is, perhaps, more useful in extinguishing a small fire than a steam-engine, and it does less damage to property?—Yes, it is more handy for use; it is more quickly got to work. The question of damage does not arise at all; that is entirely in the hands of the officer in charge. He can put on as much water with a manual engine as he can with a steam engine, if he only keeps long enough at it.

127. Do you consider that your force at present is sufficient to meet the fires of the metropolis?—I think we are very weak.

128. Can you tell the Committee what the number of fires were in the last two or three years, and also what they were when the Metropolitan Board of Works took over the fire brigade?—In 1866 there were 1,338 fires; in 1867, 1,397; in 1868, 1,668; in 1869, 1,572; in 1870, 1,946; in 1871, 1,842; in 1872, 1,494; in 1873, 1,548; in 1874, 1,573; and in 1875, 1,529. These are exclusive of chimney fires.

129. Can you separate the serious from the slight fires?—Yes; the percentage of serious and slight in 1866 was, 25 per cent. serious and 75 per cent. slight.

130. Could you tell the Committee the line which you take in dividing the slight from the serious fires?—It is altogether an arbitrary line; it is impossible to make a definition of it; but, as a rule, whenever there is a damage which requires the working of more than one engine, or which is serious in any way, we put it down as serious; but there never has been a definition.

131. Sir *Henry Peek.*] Would you call it serious if there was a loss of life, and slight if there was a loss of property?— No, we do not define it in that way.

132. A fire of a bed and bedding involving loss of life, or involving the loss of several lives, would not necessarily be put down as a serious fire; it is defined afterwards according to the losses?—It would not be put down as a serious fire, because we set down nothing, as a rule, as serious which is put out by other people with buckets or basins, or anything of that sort.

133. Mr. *Onslow.*] It is optional with you to say whether it is serious or slight?—Yes, we have no one to consult with. But I think in individual cases we could satisfy the Committee, if they choose to ask about any individual fires, what head they were placed under.

134. Mr. *Forsyth.*] It is impossible to define strictly what is a serious fire?—Yes; great efforts have been made in that direction, and they have entirely failed. At one time there was a still greater difficulty, because the insurance companies were desirous to have a third heading of things totally destroyed, and that in my mind created very great confusion. For instance, we will say a fire in the docks, in a small shed or building on one of the piers, used as a little watch room and office not 12 feet square, might be totally destroyed by fire, even before the arrival of the engines, and that would be put down under the head of docks, and total destruction. Such a fire we now put down distinctly as a very small fire. We never put it under serious.

135. *Chairman.*] Are you satisfied that the line which you draw really represents the distinction as between serious and slight?—Yes; I am quite satisfied that it does; we take a great deal of trouble about it.

136. Will you be good enough to give the Committee the figures?—In 1866, our first year under the Metropolitan Board, there were 326 serious fires and 1,012 slight: in 1867 there were 245 serious fires and 1,152 slight; in 1868 there were 235 serious and 1,433 slight; in 1869, 199 serious and 1,373 slight;

Captain *E. M. Shaw.*
27 April 1876.

in 1870, 276 serious and 1,670 slight; in 1871, 207 serious and 1,635 slight in 1872, 120 serious and 1,374 slight; in 1873, 166 serious and 1,382 slight; in 1874, 155 serious and 1,419 slight; and in 1875 there were 163 serious and 1,366 slight.

137. During that time the population and the size of the town has very largely increased, whilst the number of serious fires seems to have rather diminished than otherwise?—Yes, the numbers had attained their maximum in the year 1870, as shown by the Table I have read from, and they seem to have been somewhat reduced; last year it was considerably less.

138. Sir *Henry Peek.*] If I follow you, about 10 per cent. would be serious and 90 per cent. would be slight?—In 1866, 25 per cent. were serious and 75 per cent. slight. Now, there were in the last year 11 per cent. serious and 89 per cent. slight.

139. Do you give any rewards for the information of fires?—Yes, we give rewards; we give 1 *s.* for a call,

140. Has it not been said that these men set a good many places on fire in order to get a shilling?—It has been said that such is the case, but I am not aware of many instances. A call for a chimney is also a shilling; one man was convicted, I believe. My Table is exclusive of chimneys; I could also give the chimneys. Last year we had 4,050 calls for chimneys, all of which had to be attended to.

141. Mr. *Forsyth.*] When a chimney is on fire, supposing the engine is brought, is not the owner of the house obliged to pay something?—That has nothing to do with the engine being brought by this Act; formerly they used to pay a sum not exceeding 3 *l.* 10 *s.*; now their liability is a 1 *l.* penalty, whether the engines are brought or not.

142. *Chairman.*] Could you put in the number of lives that have been lost in the different years?—Yes, I could give the number of lives since we have kept a record of them. Before the year 1867 I am unable to offer any information at all. I have endeavoured several times to get it from the charitable society which worked the fire-escapes, but they have not furnished it, and I believe they are not able to furnish it to me. I can furnish it from the first day that we kept account, but I have not brought that paper with me. I can put it in afterwards if I may be allowed. It was not furnished for some years after we took over the brigade, but I can give it commencing with the year 1870. I will put in a complete Table. The fact is it was not the custom before we commenced with it to take note of the lives lost; it was only the custom to take note of the lives saved.

143. I understand you to say that the fire-escape system was a part of the brigade system now?—Yes, it has been since the 1st of July 1867.

144. Originally it was a volunteer concern, was it not?—It was conducted by a charitable society.

145. How are the escapes stationed through the town; are they in connection with your fire brigades, or are they separate stations?—Both. The escapes are attached in every case to the fire-engine stations. In some cases they do their duty from the stations, and in other cases they do it from their posts at a distance.

146. Are they communicated with by telegraph also?—They are not communicated with by telegraph.

147. How do they arrive at the information of a fire?—People come and call them on their posts.

148. That is to say, they have to call both the fire-escape man on duty, and to go also to the station in order to get the engine?—Yes; the message is also sent on to the station. Some people call the fire-escapes, some call the turncock, and some call the engines.

149. And all those calls are left to voluntary effort?—Yes; all those calls are entirely left to voluntary effort.

150. Do the police assist in this work?—Yes; the police assist, the public assist, and every one assists.

151. The policeman on duty is more often than not the person who gives the information of a fire, is he not?—I cannot say more often than not. The population is enormously in excess of the number of police. A very great number of calls come to us from the public.

152. But the information derived from a policemn in charge of a beat would be

be more likely to be correct and to be relied upon, would it not?—Yes, much more likely; the information coming from the police is much more valuable, as a rule, than information coming from strangers.

153. Can the police leave their beat in order to inform the station?—I think so; I think there is no difficulty whatever made in that way; on the contrary, I believe their instructions are to come to the station.

154. Sir *Henry Peek.*] I suppose at every fire escape you have a man watching it at night?—At every fire-escape station we have a man on duty; and we have also a certain number of extra fire-escapes which are in store; the men who are out on duty are not attached to those.

155. *Chairman.*] Have those stations which are represented on the map which has been presented to the Committee, all of them fire-escapes with men attached to them on duty?—Yes, at every station shown as a fire-escape station there is a fire-escape and one man on duty.

156. If a fire-escape, as you have stated, is attached to a fire-brigade station you mean that that is not necessarily on duty, and I suppose is considered in store?—No; the escapes which are not on duty are not kept at the fire-engine stations, but are kept at the workshops.

157. Do the 106 fire escapes, which you have stated, represent the number that are on duty?—Yes, they represent the number that are on duty every night. They go out during the winter months from eight o'clock at night until seven in the morning, and during the summer months from nine o'clock at night until six in the morning.

158. Is there more than one man attached to them?—No, there is one man to each escape at night, and he is in charge of it from the time he leaves his fire-engine station until he returns again.

159. Is the one man capable of working an escape and getting it to a fire?—No, one man cannot do it, but with the assistance that he receives from the person calling and from others, as a rule, he can do it.

160. Have you any record of the time which it generally takes to get a fire-escape started?—It takes less than a minute to get it under weigh from the time of its being called; everything is in complete readiness; there is nothing to do in fact.

161. Do your returns show that the fire-escapes arrive sooner or later than the engines at the scene of the fire?—As a rule there is one of the fire-escapes before there is any engine, but that is not a universal rule; there are cases in which a fire may occur at a spot nearer a fire-engine station than an escape station.

162. I want to know whether the public would generally go first to the fire escape, or do they give notice to where the telegraphic communication exists?—I think as a rule they go to whichever they know the best. I think the police go to both; they dispatch their messengers at the same time to the fire-escape, to the fire-engines and to the turncocks, when they have three messengers to send, otherwise they take them according to their judgment.

163. Then to go to the question of the water supply; on your arrival at a fire, how is that managed?—I have brought a map with me, which is at the end of the room, which shows the general arrangement of the water supply to London. The water supply for our purposes is provided by eight companies, five of which are on the north side of the river, and three on the south. Those on the north side of the river are the Chelsea, the West Middlesex, the Grand Junction, the New River, and the East London; and on the south side, the Kent, the Lambeth, and the Southwark and Vauxhall. Of these, so far as I am able to calculate, the Chelsea Company supplies an area comprising in round numbers 27,000 houses, and about 200,000 inhabitants. The West Middlesex supplies an area comprising about 38,000 houses, and 300,000 inhabitants. The Grand Junction supplies an area of about 28,000 houses, and 250,000 inhabitants. The New River supplies about 120,000 houses, and 900,000 inhabitants. The East London supplies about 100,000 houses, and about 750,000 inhabitants. The Kent Company, on the south side, supplies an area comprising about 35,000 houses, and 250,000 inhabitants. The Lambeth supplies about 40,000 houses, and 300,000 inhabitants; and the Southwark and Vauxhall supplies about 75,000 houses, and 550,000 inhabitants, making a total for all the companies in and around London of 463,000 houses, and 3,500,000 inhabitants within the areas of the water companies, as comprised within our area. Of course

Captain *E. M. Shaw.*

27 April 1876.

course the mere areas of the water companies are not necessarily the total areas of the companies' supply; in many cases, I have no doubt, those companies supply a very much larger area than I have given here. What I have given you would be our district which is comprised within the water companies' area.

164. The supply by those companies at present is chiefly on the intermittent system, is it not?—I have been considering this subject in order to frame some mode of answering the questions before this Committee, and I am inclined to think that any information on these points would be better obtained from the officials of the water companies themselves than from me. All the information which I have is necessarily at second-hand, and I think they would give it at first-hand much more satisfactorily to this Committee. But, of course, I am prepared to answer any question so far as I can.

165. When your engines arrive at the scene of a fire you are dependent, of course, upon the then supply given by the company; how do you get at it; it is through their turncock, is it not?—If it is an intermittent supply we depend almost entirely upon the turncock; if it is a constant supply we can draw the plugs for ourselves, but in either case the turncocks come at some time or other, or are supposed to come.

166. The keys of the mains are in the fire stations, are they not?—Every engine carries the necessary tools.

167. Are your men in charge of the engines cognisant of the mains, and of the way in which they are charged?—I do not think any one is cognisant of that except the man who has last done it. That is one of the great difficulties with an intermittent supply, that no one except the man who has last handled the cocks can by any possibility form a judgment upon what the condition of the pipes is.

168. Have you found in your experience since you have had charge of the brigade cases where difficulties have arisen in consequence of the want of a supply of water?—Yes, there have been cases; in proportion to the whole they are not very numerous, but I can give them, such as they are. Since we have been serving under the Metropolitan Board of Works the total number of cases in which the supply of water was not satisfactory has amounted to 586 during the whole number of years; the water arrangements, to put it in general terms, were not satisfactory, and there were 79 cases of short supply.

169. Mr. *Forsyth.*] That is since 1866?—Yes, since the 1st of January 1866; since the Metropolitan Board of Works has taken over the establishment; 79 of those cases were cases of short supply; 285 cases of late attendance of turncocks, and 222 of non-attendance of turncocks.

170. *Chairman.*] In the 222 cases of non-attendance, were you able to procure a supply of water?—In some cases we were, and in other cases we were not.

171. And was any inquiry made as to the reason of the non-attendance of turncocks on those occasions?—Yes; the Metropolitan Board of Works until lately used always to write to the water companies, and they used to get some explanation. I do not think they write now.

172. Have any of those 222 cases been recent?—Yes, some have been; there were nine cases in last year. It ought to be explained that the late attendance of turncocks means the turncock arriving after the fire-engines.

173. Do I understand you to say that the 222 cases of non-attendance do not represent the number of cases in which you did not procure a supply of water from the turncock not being there, but only that he arrived there later than the engines?—The 222 were cases in which he did not arrive at all until after the engines had left; so far as we are concerned, he did not arrive at all.

174. In those cases the fires went on as they liked without your being able to put a stop to them, or to do anything to them?—Not necessarily so, because if the mains were charged we could get the water at once, and in many cases we were able to turn on the water for ourselves from a distance.

175. That is what I meant when I asked whether in those 222 cases you had not been able to obtain a supply of water?—No; it was a very small proportion of those in which we were not able to obtain some supply. The only note that I have here is that the turncocks did not attend.

176. Surely, in your opinion, that is a most unsatisfactory state of things, is it not, with regard to the extinction of fires?—I think that where there is an intermittent

intermittent supply the state of things must always be unsatisfactory upon that point; but I think from the present condition of London, viewing it as we must do practically, I certainly have never known a case in which I could impute blame to the turncocks in the matter. For instance, a fire-engine station may be only half a mile from a fire, and the turncock may have a district to attend to of three or four miles; he may have, perhaps, just started on his tour, and it is impossible to find him, and an hour or an hour and a half may elapse before he can be communicated with; and then of course this result occurs. He so far as he his concerned, I suppose, does his best; I believe they always do.

177. Then in fact that points to the necessity for a constant supply rather than to fresh arrangements of stations and turncocks, so that the plugs may be entrusted to the fire brigade?—Certainly, I think so; it is most important, considered from my point of view, that the water supply everywhere should represent an immediate supply of water, that we could draw for ourselves, and so be independent of the turncocks.

178. Supposing there was a constant supply, you would be able invariably to set the engine to work as soon as it arrived?—Yes.

179. How are the plugs arranged; there are very few hydrants applied to London, at present, I believe?—I do not distinguish at all between plugs and hydrants; I never acknowledge any distinction between them; I do not think that, mechanically speaking, there is any; but I believe it has been customary for the public to call the wooden plugs, if stuck into the pipes, "plugs," and any mechanical arrangement for getting access to the water by the name of hydrants. There are not certainly very many hydrants, in that sense of the word, in London.

180. I suppose that the difficulty in getting the water at present lies very much in the fact that you do not know what branch supplies to shut off in order to let the plug which you want to work from get the full supply for you?—Yes, exactly. No one, except the man who has last handled the cocks, knows which cocks to turn on full, and which to shut off, in order to direct the full supply to any one particular place; that of course only applies to those parts in which there is an intermittent supply.

181. That is almost the case throughout London, is it not, with very few exceptions?—There are large districts now supplied with a constant supply.

182. Have you seen the map which has been printed for the use of the Committee, showing the water companies' districts?—No, I have not seen one showing the water companies' districts, but I have one of my own.

183. It professes to give the areas of the constant supply districts?—I have not seen this map before. It appears to represent it, as far as I can judge, inaccurately; the portions marked with lines are said to be the constant supply districts. I should say that there is a much larger portion of the Metropolis under constant supply than what is shown on this map.

184. In your opinion, what is here marked as constant supply districts of the metropolis does not represent the amount that is under constant supply?—I have only seen this map now for the first time. I have not even heard of it before; but looking at in this way, I should say decidedly that there is a very much larger portion of London under constant supply than what is shown in this. Take, for instance, the New River Company, which supplies an enormous district; they have 340 miles of streets, and they have 169 miles of pipes under constant supply, possibly representing very nearly 169 miles of streets. I do not see those shown here at all as under constant supply.

185. Have you any means of giving information to the Committee as to the amount of constant supply that is at present afforded?—I think so; but as I said before, the Committee will, I suppose, receive my evidence upon that matter with a certain degree of hesitation, as I give it with hesitation, because really it is only the water companies themselves who can supply it; but as far as I know, I can give a great deal of it. For instance, the Chelsea Company has got 224 miles of streets in their district, and about 50 miles of those streets have got constant supply.

186. Mr. *Herbert.*] Do not you think there is a little confusion in the matter; are you not alluding to constant pressure in the mains and not supply?—Yes, certainly; to constant pressure in the mains.

Captain *E. M. Shaw.*

27 April 1876.

187. I take it that this is constant supply to the houses?—I do not take into account the water supplied with regard to domestic service, or to mercantile and commercial purposes at all. I only take it for my own purposes. I have no knowledge about the other part of that subject. I am sure, from a glance at the map, that it is very imperfect with regard to the pressure all over the metropolis. I could give the proportion here, as far as I know the parts of the districts which are under constant pressure in the street mains for our purposes, and therefore available for extinguishing fires. I think you have got it for Chelsea 224 miles of streets and 50 miles of pipes. The Committee will observe that I make a distinction between miles of streets and miles of pipes. In many cases one mile of street may possibly have five miles of pipe in it; but, as a rule, I think that probably a mile of street might have a mile and a half or two miles of pipe.

188. Mr. *Ritchie.*] When you say 50, do you mean miles of pipe or miles of street?—Two hundred and twenty-four miles of street and 50 miles of pipe under constant pressure for our purposes. The West Middlesex Company has 193 miles of streets and about 70 miles of pipe under constant pressure. The Grand Junction Company has 140 miles of streets and about 42 miles of pipe under constant pressure. The New River Company has 340 miles of streets and 169 miles of pipe under constant pressure. The East London Company has about 300 miles of streets and about 70 miles of pipe under constant pressure. The Kent Company has 211 miles of streets and 80 miles of pipe under constant pressure. The Lambeth Company has 372 miles of streets and 90 miles of pipe under constant pressure. The Southwark and Vauxhall Company has 360 miles of streets and about 100 miles of pipe under constant pressure. That makes a total of about 2,140 miles of streets and 671 miles of pipe under constant pressure.

189. Are you quite sure that in speaking of miles of pipe you do not mean miles of streets laid with pipe?—No, that is what I am not sure of. That is what I think must be got from the water companies. I am quite sure of this; that every mile of street does not contain exactly a mile of pipe, and it is always either more or less, generally more; and that consequently those 671 miles of pipes which I have given as being under constant pressure in the whole metropolis do not represent anything like 671 miles of streets. But that, I think, you will get accurately from the water companies themselves.

190. *Chairman.*] Are your officers aware of these districts where the constant pressure exists?—More or less we are aware of them. For practical purposes I think we are aware of them.

191. Therefore, when a fire occurs in any of those districts you know at once, and your officers can make use of the mains without the turncock if he happens to be late?—Yes, wherever the supply is constant I think as a rule for practical purposes we can; not in every case, but very nearly so.

192. Is that from any fault in the knowlgdge of the plugs?—Yes, it may be that in some of the districts it is impossible to obtain a knowledge of all the plugs.

193. Have you at all considered whether in those districts the fires are extinguished more readily than they are in the others. Have you any records of fires in those districts showing whether they have been put out more easily?—No special records. But I can explain about this. Practically in those districts where there is the constant supply we get the water quicker, and the fires are extinguished quicker, but we do not use the water supply from the mains in those streets. There are very great difficulties about it. We are always obliged to make our arrangements for the worst state of things with the intermittent supply. We use the constant supply whenever we can make it available, but we do not trust to it.

194. That is to say, you mean that your preparations are made for the intermittent supply, and therefore the constant supply is not so available as it ought to be?—Exactly so. I mean that if the intermittent supply were all done away with, and the whole town were placed under the constant supply, we should be able to make certain very great improvements in our arrangements for availing ourselves of the constant supply.

195. In your opinion that would very materially assist you in extinguishing fires when they happen?—Yes, decidedly so.

196. I suppose

196. I suppose the first few minutes after you arrive at a fire are perhaps the most important part of it?—Certainly they are.

197. You would feel inclined to recommend in your evidence that if possible the constant pressure system should be the system adopted throughout the town, with the view to assist in extinguishing fires?—I have no doubt whatever that it is the proper system.

198. If such a system existed your men practically would be able to use the mains without the assistance of a person like a turncock who may be, perhaps, on duty elsewhere?—Certainly.

199. And then the delay which you have stated to have occurred in cases of non-attendance would have been avoided?—Yes.

200. Sir *Henry Peek.*] Are the plugs and hydrants of all the companies of the same pattern?—Yes, practically the same pattern. They are very rough; they are not accurate; they are intended to be of the same pattern.

201. *Chairman.*] Are you not provided at the stations with the means of using them?—Yes, we are provided with the same tools as the turncock.

202. So that if your men knew that it was the constant supply, your men would act as the turncock does?—Yes.

203. Is there anything else in connection with the water supply which you would like to recommend for the greater efficiency of the service?—I do not know that there is any evidence which I wish to volunteer about it, but I could answer any questions that may be asked me. Our requirements in the way of water are really very small, but they somehow do not seem to be met. Our requirements are simply to have a supply of about 2,000 gallons a minute ready for immediate delivery, within such distance as (we will say) 14 engines can work on a fire, not using more than about half a mile of hose. Those are our requirements, and they seem to be very small when they are looked at in that point of view.

204. I suppose that you are not satisfied with the existing number of engines, and that you would wish, in the interest of extinguishing fires, to increase it if possible, if it was within the power of the Metropolitan Board of Works?—Yes, that is now under consideration by the Metropolitan Board.

205. Have you formed any idea of the stations and the number of engines that would be required for bringing up the force to what you would consider a really efficient force for dealing with fires in the metropolis?—Yes, I have done so.

206. Mr. *Hankey.*] I think you said that you desired to have such supply as would enable you to work 14 engines with only half a mile of hose?—Yes, with a combined length of hose of half a mile.

207. Do you mean half a mile to each engine?—No, I mean that the combined length of all the hose from the 14 engines should not exceed half a mile.

208. Mr. *Stevenson.*] The quantity of water being about 2,000 gallons?—Yes, for immediate use.

209. Mr. *J. S. Hardy.*] Does that mean 2,000 gallons for each engine?—No, 2,000 for the total. It is an exceedingly small requirement, 2,000 gallons coming out per minute in such places where the total quantity of hose in use would not exceed half a mile, allows less than 150 gallons for each engine. We should be satisfied with that.

210. How many openings would that require?—As I put it now, 14 plugs or hydrants.

211. *Chairman.*] Do you think generally that that could be obtained without the constant supply?—I am afraid that all over London at present that could not be obtained, either with or without the constant supply, in consequence of the smallness of the pipes in many of the districts. I am afraid that there are many pipes which would not deliver that quantity at all, although it seems so very small a quantity.

212. You mean on the present system?—Yes, with the present pipes. There are many places in which the diameter of the pipes is only 2 inches, those being street pipes in the vicinity of very large buildings. The Committee will quite understand that no pipe of 2 inches, perhaps many miles away from the source of its supply, from the reservoir, can deliver 2,000 gallons a minute in convenient spots through 10 or 12 or 15 openings.

213. May I ask you whether you are satisfied with the existing state of the

Captain *E. M. Shaw.*

27 April 1876.

stations and engines, or whether you would suggest a scheme for greater efficiency in any way?—There are many schemes which I have submitted at various times to the Board; but I do not think that our first requirement now would be to increase our number of men.

214. As I understand you, you say that a constant supply would give you greater facilities for extinguishing fires, and I should like to know whether you think that your existing staff, both of engines and stations, would give you the greatest facilities that you could possess, or the facilities that you would wish to possess, for carrying out the work?—As I said before, I think we are weak, but our stations are not badly placed for carrying out our work.

215. Supposing you had a larger number of stations, of course you would be nearer any given fire?—Certainly.

216. And in that way you would increase the efficiency, because you would bring your power to bear upon the fire quicker?—Yes, but only if we had a very largely increased number of men; for instance, there can be no greater danger to a town like London, with the enormous value of property in it, than over distribution.

217. What I wanted to arrive at was this: the Committee are instructed to inquire into the best means of providing further security from loss of life and property by fire in the metropolis, and from your experience I ask you whether you think that by increasing the present number of stations and engines and the staff of men, with a constant supply given you by the water companies, you would procure that greater efficiency, and would be prepared to extinguish fires more readily than you can do under your existing circumstances?—Clearly so; I think there can be no doubt whatever upon the subject.

218. Have you at all formed, in your mind, an idea of what would render the brigade thoroughly efficient in that way?—Yes; I have at various times brought schemes under the notice of the Board on that subject.

219. Would you give the Committee what your most recent experience is?—I think that this will be best obtained, if the Committee will allow me to say so, from the books of the Board, because I am not quite sure about my dates, but I think my last scheme must have been in October 1872.

220. Who would give that information to the Committee?—I do not know; I think the minute books would give it.

221. Is that your most recent report with regard to a change in the system?—As well as I remember, it is my most recent report of any great importance.

222. I imagine that your experience every year tends rather to show you that your brigade is weak in certain points; that it either takes you a longer time to get to the fire, and therefore it has got a greater hold before you can attempt to put it out than you could wish, or that your staff is insufficient to cope with it, and the supply of water not sufficient when you get there; I understand you to say, with reference to the water, that you believe that a constant pressure in the pipes and larger pipes would enable you to cope more readily with the fire; what I want to get at, if I can, for the information of the Committee, is, whether you think that, that greater supply being given, more efficiency would be secured by your stations being multiplied so that the call would not have to be sent to any distance, and the men could be quicker upon the spot being nearer the fire; and therefore whether the multiplication of your stations and the multiplication of your engines is not desirable, with a staff in proportion?—Yes; I am clearly of opinion that it is desirable.

223. You having said that it is desirable, I want to ask you whether, having great experience in the matter, you have formed any idea of what addition would really practically give security to the town against fire?—Yes, I have done so.

224. Would you give the Committee that information?—My last report, if I remember rightly, the last actually made on this subject, was an estimate for 931 firemen.

225. Mr. *Ritchie.*] The Chairman wants to get at what your opinion is at this moment; not with regard to any special report which you have made up, but what your idea is of an efficient brigade at this moment?—I do not think it is very much different from my estimate of 1872.

226. *Chairman.*] I understand you to say that you put this before the Committee as what you really believe would give to the metropolis fair security against

against fire?—Yes, a total force of 931 men; 330 fire-engines, 200 fire-escapes, and 169 fire-engine stations.

227. Would you separate those fire-engines as between steam and manual engines?—There would be about one steam for every four manual engines.

228. That is a very large increase both in the stations and in the number of engines to what you have at present?—Yes, it may seem a large increase, but I think that the circumstances of London would justify it, looking to the values which are involved.

229. You believe that if that force were properly distributed through London with a constant pressure on larger pipes, you would be able to say that practical security had been obtained, as far as you can obtain it, for coping with fire in a town of this sort?—Yes, that is my opinion.

230. One in every four I understand would be a steam-engine; would you increase your number of river engines?—Yes, to double the number I think, making eight or perhaps 12, according to circumstances, but a great deal depends on the arrangements, for the river cannot be exactly managed without reference to the tiers of ships in which the engines can be placed; we depend altogether for that on the Thames Conservancy, but probably they should be doubled.

231. In addition would you suggest any alteration in the present relation of the police with regard to the brigade; would you not bring them more together, so that the policemen on duty would be of greater service for the purposes of the brigade?—This was not contemplated in the scheme which I have now given you; no connection with the police was contemplated in that scheme at all.

232. From your experience do you think that you could make use of the police on duty to assist the operations of the fire brigade more than they do at present?—I have no doubt that there is a great deal which could be done in that way if we could settle the question of responsibility, but I am afraid that the question of a divided responsibility in a town of which the value is estimated at, I believe, 1,620,000,000 *l.*, is really too great a question to enter into. If the question of responsibility could be fixed in any way, I see no reason why we should not avail ourselves very largely of the services of the police.

233. The police, I presume, under a system in which you could work together, might practically with a constant supply use the hose before the engine even arrived?—Yes; in all probability the police could extinguish three-fourths of the fires, but then those would be the smaller fires.

234. I suppose that the great danger really lies in the small fires getting ahead for a given time, and becoming more serious fires?—No doubt.

235. Therefore, if the small fires could be attacked at once it would very often save the town from a much larger conflagration?—Yes, but the places in which the police would be of most service in that way, I think, would be in the outlying districts, where a small fire could not become a large one; where it would destroy a single house. I think that in the crowded district of London fire-engine stations would be near enough; so that though the police might extinguish a very small fire, still they could not extingush a moderate sized fire before the arrival of the firemen.

236. Mr. *Ritchie.*] Do not you call the burning down of a house a serious fire?—We do regard it as a serious fire, but not as a serious fire in the sense of doing enormous damage, and desolating a district of the town.

237. *Chairman.*] Are you aware of the Report of the Committee of 1862, in which they recommended the amalgamation of the fire brigade with the police?—Yes, I am.

238. I think it was stated in evidence before that Committee that the policemen could be very usefully employed in the way that I have suggested?—There can be no doubt that they could be very usefully employed in that way; but in that case what appears to me to be still more important is the division of responsibility, and at present that seems to me to be a gigantic difficulty.

239. You do not think there is any way in which the two forces, the fire brigade and the police, could be brought together and act together, both under the responsibility of their own heads, so as to work both forces for this purpose as a united body against a fire?—I think if the police authorities were to allow us the services of a large number of their men in those cases, and would hand them over for the moment to our Board, something might be done in that way; and I see no reason why it should not.

Captain *E. M. Shaw.*

27 April 1876.

240. Mr. *Forsyth.*] Does not it require a certain amount of dexterity in doing the work, which a policeman would not be able to do as well as a fireman?—Not nearly as well, but there is a great deal that could be done by policemen or by soldiers, or by any properly organised body of men; for instance, in laying down hose on the ground, or things of that class, in the first 15 or 20 minutes of a fire, which could be done almost naturally by such men.

241. *Chairman.*] The efficiency would be increased if you had power to entrust to the policeman on duty a hose which he could apply at once to the main in the interval between a fire breaking out and the arrival of the engine and the officers of the brigade?—Yes, I think so decidedly; that is done in some towns.

242. Do you think that if there was an understanding between the two forces, you might drill a certain proportion of the policemen really as firemen for such purposes as that?—That would clearly be the arrangement; it would be necessary to do so, but the amount of instruction which would be required would be very small indeed for the sort of help that we might want. If we could only make them responsible to us there would be no difficulty whatever about the instruction.

243. That as soon as a fire broke out the instruction that you had previously given to the policeman should be brought to bear until you arrived with your force, and that then he should be at your disposal?—Yes.

244. Is there anything else which you would wish to suggest with regard to this scheme which you would propose?—I do not know how far I can bring it forward here; my scheme was one which was made for the information of my own Board.

245. Knowing that this Committee have to inquire into the best means of making the brigade efficient, I merely wish to ask you whether there is anything which you would suggest in addition to the increase of numbers, the increase of stations and engines and the constant pressure, as likely to aid you in carrying out this work?—I think there is a question which arises, from my point of view, before any of those here, and that is some means of retaining the services of men after they have been trained.

246. That would come under the head of emoluments and superannuations?—Yes, that appears to me to be the very first thing to consider, to stop the drain in our numbers.

247. There are cases in which, as you have stated, you have reported your own private opinion, formed upon your experience with regard to what you would recommend as an efficient means of coping with the fires that may arise in the town?—Yes.

248. Sir *Henry Peek.*] Supposing a fire were to occur and 100 *l.* worth of property were burnt, and one life was lost, would you call that a serious or a slight fire?—It all depends. As a rule 100 *l.* worth of property would be so very slight a fire that we should put it down as a slight fire.

249. Not caring for the life that was lost?—We put down the life separately; we make a complete entry of the life, but not as a serious fire; it may be only a bit of bedding or the furniture of a very small room that may be burnt.

250. *Chairman.*] The Committee have decided to ask you to put in any reports which you may have made since 1866 to the Metropolitan Board of Works with reference to the increase of the brigade, either in men or stations, or engines, for the purpose of improving the efficiency of the force?—I will send them to the Committee if they desire it.

251. Mr. *Forsyth.*] Are there many?—Yes, I should think there are a good many.

252. Sir *Henry Peek.*] Would there be as many as six?—I could hardly say off-hand, but I should think there would be a great many more; of course that is without reference to their being adopted.

253. *Chairman.*] It is with a view of showing the progress in your mind as an experienced person of what would efficiently meet the difficulties of the fire question in the metropolis. The Committee consider that your experience would be very valuable if it was furnished to them with regard to forming an opinion as to the latter part of the order of reference which has been submitted to them?—I presume that I am bound to obey any order of this Committee, but I think it places me, as an official, in a very awkward position.

254. As you suggested that it should be placed before the Committee by an official,

official, or member of the Metropolitan Board of Works, and as the chairman of the Metropolitan Board of Works has stated that the Metropolitan Board of Works wish nothing to be concealed, and are prepared that it should be so submitted, perhaps you will be good enough to do so?—I will submit them. I have not got them here, because I had no idea that I should be asked for them.

255. I was going to ask you with regard to the scale of the emoluments, and the pay of the force; can you state what the pay of the force is at present?—Yes; our 4th-class men receive 3*s.* 6*d.* a day, the 3rd class 4*s.*, the 2nd-class 4*s.* 6*d.*, and the 1st class 5*s.* The 2nd-class engineers 6*s.*, the 1st-class engineers 7*s.*; the superintendents 200*l.* a year, and the chief officer 1,000*l.* a year.

256. Sir *James Hogg.*] Would you put in what the rates of pay were in 1866, when they were raised, and also state to the Committee the extra emoluments that the men get?—I will do so, but I have not yet finished my reply to the honourable Chairman's first question. I was about to say that the 1st and 2nd class firemen, those who receive 5*s.* and 4*s.* 6*d.* a day respectively, have lodgings found for them within the buildings of the Board, or in the vicinity, and they pay rent to the Board for those lodgings. As a rule with us the rent is 1*s.* a week for a single man, and 2*s.* 6*d.* for a married man; there is no rent greater than 2*s.* 6*d.* a week paid by our men. The 2nd and the 1st class engineers, who are the men in charge of the fire-engine stations, have their rooms found for them free, and also coals and gas to a limited extent. The superintendents have also their rooms, coals and gas found, and the chief officer has also his rooms, coals and gas found.

257. Could you give us a comparison of those rates, as at present, with the rates under the old system?—I can do it, but it is so long since the other system was at work that I am not sure about being correct. There were only two classes of firemen in the old brigade. The second class, as well as I remember, received 3*s.* a day, and the first class, I think, received 3 *s.* 6*d.* a day.

258. That, of course, represents a great rise of wages?—Yes, it does.

259. Then, at the same time, the wages of other people, as compared with them, have risen in even a larger proportion?—Yes, I do not think that those men in the junior ranks of to-day are so well off as the men in the junior ranks 12 or 13 years ago. Everything, I think, has increased in the way of expense for poor men keeping families.

260. Is that all the remembrance of the old brigade that you have?—Off hand, that is about all that I could give.

261. How does this rate of wages compare with regard to the rate of other similar forces, such as the police and other forces in the metropolis?—I presume that this question refers to the rate of to-day. I find that a 3rd-class constable of the metropolitan police receives 1*l.* 4*s.* per week; a 2nd-class constable receives 1*l.* 7*s.*; a 1st-class constable receives 1*l.* 10*s.*; a station serjeant receives 2*l.*; a 2nd-class inspector receives 2*l* 15*s.* 6*d.*; a 1st-class inspector receives 3*l.* 2*s.* 6*d.*; a chief inspector receives 3*l.* 13*s.*; and a superintendent receives from 300*l.* to 400*l.* a year.

262. Sir *Henry Peek.*] Would that be for the same number of hours of work?—No; I do not think that any comparison could be made between the hours of work.

263. *Chairman.*] With regard to this, have the men of the fire brigade any superannuation?—There is no superannuation scheme arranged by the Board.

264. It is limited, is it not, to gratuities, or pensions to widows in case of accident?—Yes; each case is dealt with by the Board on its own merits; there is no claim. Sometimes a gratuity is given, and sometimes a pension.

265. Then pensions are occasionally given?—Pensions have been given.

266. Mr. *Herbert.*] Could we have a return of the gratuities and pensions since 1866?—I think that these will all be found in the books of the Board, which are very accurately kept.

267. *Chairman.*] You would suggest that that information could be obtained from an officer of the Metropolitan Board?—Yes.

268. Practically, whilst there is a scale of superannuation with regard to the police force, there is no certain scale at all with regard to the force under your command?—That is so. I can give the number of men who have left since we have been under the Board, and the books of the Board will give the amounts allowed to any who have got an allowance.

Captain *E. M. Shaw.*

27 April 1876.

269. You have not, as I understand, a complete return of the number of pensioners showing how they were pensioned, and what led to the pension being given?—I have no doubt that there is a complete return, but what I can give you is the total number who have left, and the causes of their leaving, so far as we know those causes, all of which you could get from the books of the Board.

270. Mr. *Ritchie.*] Is that such a return as you refer to (*handing a paper to the Witness*)?—I believe such a return exists.

271. *Chairman.*] As far as you have recommended them to the Board for consideration?—This is a return up to 1874. It is certainly correct up to 1874, from the commencement of the brigade being under the Board, from the beginning of 1866 to 1874.

272. Mr. *Ritchie.*] That is an official return, is it not?—Yes, up to 1874, but not to the present time.

273. *Chairman.*] Has that return been kept in a similar manner since 1874?—I do not know that the Board have ever moved for a return since; but the Board is aware of the numbers and these figures, although perhaps they may not include what the Committee wishes, represent the amounts given.

274. Do your figures, then, show the amount given in each case?—No, mine do not.

275. Mr. *Ritchie.*] This return embraces the whole of them, does it not?—I do not think it does; I think it is only up to 1874, and there have been cases since.

276. This return is a return showing the actual mortality amongst the men employed in the Metropolitan Fire Brigade, the number of men wholly or partially disabled through accident, and discharged through ill-health, together with the amount of compensation given in each case by the Metropolitan Board of Works; that is what I want?—You have it all complete up to 1874, I think, but I have no doubt that the Board could add something to it.

277. As I understand, you are in the same position as a chief constable is with regard to the police force in a county, that he recommends men who are incapacitated from ill-health, or other causes, to the quarter sessions for a pension or for a gratuity, as the case might be; and those returns will be placed before the Committee with the number of cases in which the Metropolitan Board had granted pensions or gratuities, or thought that the case did not deserve either the one or the other?—I have no doubt that such a return can be got through the books of the Board.

278. Mr. *Clifton.*] Do not you think you might at the same time add to the return a list of the men who have displayed merit, have saved life, and whose cases have been laid by the chief officer before the Metropolitan Board of Works, and the gratuities that have been given to them in consequence?—I think it possible that such a return could be made.

279. *Chairman.*] Could you give us a return with regard to the lives saved and the merit of the officers?—I have not the least doubt that all those returns also can be obtained much better from the books of the Board, because those books are very accurately kept; I think the Board would much rather give their own version than receive mine, which after all is only the matter upon which they form their opinion.

280. Mr. *M'Lagan.*] Are the Committee to understand that the reports of the Board will contain all the information which we have asked for?—No doubt the books of the Board will contain that information in every way.

281. But would the published reports?—I should think not; I am speaking now of the committee books; the committee books of the Board would contain naturally all the information that you want.

282. *Chairman.*] Have you a record of the number of men whom you have recommended for merit?—Not off-hand.

283. Could you furnish the Committee with it?—Yes, I could; but that also would be better obtained from the books of the Board; I am entirely in the hands of the Committee, and am ready to give everything, but there is nothing that I can give in that way which you cannot obtain with perfect accuracy from the committee books of the Board.

284. The committee books would show, and anybody who represents the committee could give evidence as to the number of cases in which you have recommended men for merit, either for saving life or for other good conduct?—Yes, certainly.

285. And

285. And would you also say that that gentleman from the Board could give us evidence with regard to the number of men that you have recommended for gratuities, and the number of men that you have recommended for pensions, and the way in which those recommendations have been separately dealt with? —Yes; I have no doubt that all those particulars, and many more, could be obtained with the most perfect accuracy from the books.

286. Have you in your possession now information of the number of cases which you have submitted to the Board for their consideration?—No, I have not; it involves going over the papers of 10 years, or nearly 10 years.

287. Therefore when you said you could give the Committee those cases, it was only that you could supply them with that information by referring back to your own records?—No; what I meant was this; I thought the question referred to those men who have left me for any cause. I am prepared to give you the total figures of the men who have left; I thought that was the question which was asked me.

288. We were brought back to the question of superannuation by one of the Committee; I was going on to ask you with regard to your emoluments, and with regard to the number of your recruits; then a Member of the Committee went back to this question of superannuation, and then I asked you whether you could give us the number of cases in which men had been recommended for pensions or gratuities to the Metropolitan Board?—I have no doubt that I could get all those returns within about one day.

289. As I understand you, you are not now in a position to answer that question?—I am not now in that position; and besides, I think that you could get it with the most perfect accuracy from the books of the committee, without reference to me at all.

290. And those books will record your recommendations, and the way in which they have been dealt with?—I have no doubt of it. And I have no doubt that every question which has been asked me now upon this point could be answered with greater accuracy out of those books than I could give it to this Committee.

291. I would ask you whether you find any difficulty in recruiting your force at the present moment?—Yes, I do, a very great difficulty.

292. Formerly, as I understand, there was a list kept of applicants for the fire brigade; is that so?—Yes, and there is now; at least, there is a book.

293. Are there any applicants at the present moment in the book?—No, there are no applicants in the book.

294. Have you found any practical difficulty in recruiting the 398 men, which is the total of your force?—I am obliged to be very particular as to what men I accept, and I do get a large number of men, but the drain of our force by men going away is so great that I can hardly recruit up to the necessary number.

295. Is 398 all told the absolute recognised strength of all the force?—That is my authorised force; that is the number which I am authorised by the Board to keep.

296. Have you at any time been under that strength?—Latterly we have been under it.

297. To any considerable extent?—No; at this moment we are three under.

298. You find a difficulty now in filling up those three places?—Yes, we have no means at present.

299. That is to say, to get efficient men whom you can entrust with the duties? —Yes.

300. Do you attribute that difficulty at all to the present scale of pay, or do you attribute it to the present scale of pay combined with the uncertainty of pension?—I attribute it to the fact of other people being able to give more money for our men's services than we give them to retain them.

301. That is to say, the present scale of pay, as compared with the rate of pay of other employments, does not entice men to your service?—It is rather this, that the men are enticed to the service. I think that the service is popular and men desire to come into it; but they do not come into it in sufficient numbers to keep us up to the full strength.

302. Do you find that the men leave you after being in the force for a certain

Captain *E. M. Shaw.*

27 April 1876.

time?—Yes, after being in the force some time; that is at present what we are suffering from very much.

303. And that may almost be attributed to the fact that when they join the force they find that its emoluments are not satisfactory, or so good as they might obtain in other employments?—Yes, I presume that that is undoubtedly the reason of it.

304. What are your hours of working in the force?—Our hours of labour do not show very large as mere hours, but they are spread over the whole 24 hours. Our men are like sailors on board a ship; they are either at work or ready for work.

305. Are they divided into watches the same as the police?—It is impossible to do so. In some of our stations we endeavour to do it, but as a matter of practice it is quite impossible to keep them at regular watches. The duties are too numerous to keep them at special watches.

306. I think in the metropolitan police they have the advantage of you also in the fact that they have a given time off duty?—Exactly; our men have no time at all off duty, except by permission. They are always ready for duty.

307. That is very much to be attributed to the smallness of your force, I presume?—Yes, that is entirely owing to the numbers.

308. Do you think that the increased force which you suggest would obviate that?—Yes, I do; but I do not think that the increased force alone would do it. I think that there must be increased prospects held out to retain the services of men after a given date.

309. Do you attach importance to the question of the establishment of a superannuation fund?—Yes, I do, very great importance.

310. Do you think that men who enlist from a love of the life, or the heroism that there is attaching to the life, would remain with you afterwards permanently if there were some permanent prospect held out when they were invalided or injured?—Yes, that is clearly my opinion.

311. And, therefore, any step of that sort would increase the efficiency of your force and your power of dealing with fires?—Very much so.

312. Can you give the Committee what the present finances are with regard to the Metropolitan Fire Brigade?—No; that I think the financial officer of the Board could give you much better than I can. I know it in round numbers, but not sufficiently for this Committee.

313. Is there any other information with regard to the reference to us which you would like to submit to the Committee in examination-in-chief?—No, I am not aware that there is. Every book in my establishment is, of course, at the service of this Committee.

314. Mr. *Ritchie.*] By whom was the old brigade maintained?—By an association of some of the insurance companies.

315. Do you know what the cost of it was?—I think that at the time of giving up it was about 25,000 *l.* a year.

316. You said there were, I think, 131 men available in the London Fire Brigade?—One hundred and twenty-nine was the correct figure.

317. How many of those men were actually available for fire after taking off those that are required for the various duties?—All of them.

318. All at night or any time?—At any time.

319. Therefore, in the London Fire Brigade you have 129 men always available?—Perhaps I ought to correct those figures from 131 to 129; 131 was my authorised number: just before joining the Metropolitan Board two men left for some cause, therefore the number which I came over with was 129 all told.

320. And in addition to that there were the parish stations and engines and men?—Yes.

321. Do you know how many men there were?—I do not think I could say off-hand, but we did make out a return of them shortly after.

322. Was it about 85?—More, I should think.

323. I have a list here of all the stations, giving a total of 85 men?—I think there were 85 men who were considered more or less useful, and a large number who were considered of no use at all; I think that in the city alone there were more than 85.

324. I am excluding the city in that estimate?—I believe that in the city alone

alone there were more than that number now named, therefore that would add very much to the total number.

325. Do you think that in addition to the 85 there were as many more in the city?—I think I have heard so, but I forget how many.

326. That would give you, adding them all together, 299 men?—Yes, counting them by numbers merely 299 men, but not 299 available men.

327. You would say that you had 129 available men?—Yes.

328. Then, when I suggested 85 as being the number available in other districts you said that you thought that was about the number of men efficient and available?—Yes, you mean that as the number that might be called in some sense efficient. I am not including the city; I think the city have at least perhaps that number of men upon paper available; I think you may exclude the city in the available number for duty.

329. We may say at least there were 214 available men at any time for service with engines under the London Fire Brigade?—Yes, 214 at least.

330. And that was for an area of 10 square miles?—Not exactly. Those parish-engine keepers were not available out of their own parishes; as a rule they never left their parishes.

331. But they were all within the 10 square miles, were they not?—Yes, but not available for combination with others.

332. Not for combination, but there were those men within that area?—Yes, that number did exist undoubtedly.

333. And at present the area is 121 square miles?—Yes.

334. I presume you were consulted at the time of the transfer from the London Fire Brigade to the present body?—Yes.

335. And you gave in estimates of what you would consider an efficient brigade for London?—Yes.

336. How many of those estimates did you give in?—I gave in three.

337. What was your first estimate for?—My first estimate was 70,000 *l.* a year.

338. And how many men?—Five hundred and seventy-four men.

339. And how many engines?—Three hundred and thirty.

340. And how many stations?—One hundred and fifty-seven.

341. Did you take into consideration at the time of making that estimate of 70,000 *l.* the then condition of London, the population, the area, the number of houses, and the amount of property to be protected?—Yes, I took everything into consideration.

342. Was that the estimate upon which the transfer was based?—No, it was not.

343. Then you made out a second estimate, did you not?—I made out a second estimate.

344. What was the amount of that estimate?—£.52,000 a year.

345. And how many men?—Four hundred and sixteen men.

346. How many stations?—Ninety-five stations.

347. How many engines?—One hundred and forty engines.

348. Was that the estimate upon which the transfer was based?—No; in that estimate there was an addition which was not intended by the instructions which I received from the Home Office, and of which I was not aware until after it was made. That estimate came to 52,000 *l.* The desire of the Home Office at the time was that the estimate should not exceed 50,000 *l.*

349. Then you prepared another estimate?—Yes; I prepared a third estimate.

350. Will you give the particulars of that estimate?—£. 50,000; 277 men; 129 engines, and 89 stations.

351. I suppose you still considered, in making out those estimates, that the first one which you gave was the one which, if it had not been for the money, should have been the one adopted?—I think so.

352. I presume that the third one was, in your opinion, the extreme minimum?—I did not take it as a minimum at all. I took it upon the instructions as the best force which could be made up for the money.

353. If you had been unfettered you would never have dreamt, I suppose, of forming such a brigade for London if efficiency had been the only consideration?—I never should have thought of it.

354. I may take it, I suppose, that certainly it was the lowest estimate, looking

Captain *E. M. Shaw.*

27 April 1876.

ing to efficiency, that you could possibly make?—I do not think that the question of efficiency was so much taken into account in that estimate as the question of the most that could be done for that very limited sum of money.

355. Then it was under the last of those estimates that the transfer was made?—It was.

356. Did you allow for any work in connection with fire-escapes in those estimates?—No, none.

357. May I ask you how the brigade is managed by the Metropolitan Board with reference to the policy of the management. It is managed by a committee, is it not?—It is managed by a committee of about one-third of the members of the whole Board, who prepare the reports and bring them up to the Board, and either get them passed or rejected, as the case may be.

358. Do you know whether the members of the committee are selected on account of any particular special knowledge in connection with this matter?—That I cannot say. I think some member of the Board would give you that better than I can. I presume that is the case.

359. You attend every meeting of the committee I presume?—Yes, I attend every meeting of the fire brigade committee.

360. As the adviser of the committee upon all questions connected with the fire brigade?—Yes.

361. Then you being the adviser, may I ask whether your advice is always taken?—Certainly not.

362. Are you consulted by the Board upon all matters connected with the fire brigade?—I think so. As a rule I am certainly so on nearly all subjects; I cannot say absolutely everything.

363. You make reports when you consider it necessary?—I make reports to the committee, and I attend to explain my reports, but of course it does not at all follow from that that my reports are adopted. The committee use their own judgment.

364. Is the responsibility of the efficient state of the brigade thrown upon you by the committee, or do they take that matter really into their own hands?—I do not know that I quite understand the question. Within certain limits the responsibility rests upon me absolutely.

365. If you were to report to the brigade committee that you considered that the brigade was not efficient, on account of certain circumstances existing in the brigade which ought to be remedied, would it, as a matter of course, follow that your advice would be taken?—Not as a matter of course, certainly; the committee judge for themselves.

366. The brigade is really managed by the committee, and not by you?—Yes, it is managed by me within certain limits. But there are certain things that I have no power to do without the orders of the committee. There are certain very large powers entrusted to me, or to any officer that the Board chooses to appoint in charge of the force, and within those limits I am entirely responsible to the Board for everything that is done.

367. I want to know whether, not being probably practical men themselves, or understanding all the technicalities themselves, they rely upon you, and follow your advice, when your advice is given, as to anything which shall contribute to the efficiency of the brigade, or whether they form their own opinion upon your advice, and act according to their own opinion?—They certainly act according to their own opinion, as all boards do in connection with their officers. An officer has no power at our Board to do more than make a recommendation, and it, of course, rests with the committee to adopt it or reject it, or to adopt a part of it and to reject the rest.

368. Was the plant of the old brigade handed over to the new?—Yes.

369. Was it paid for?—No, it was not paid for; it was handed over gratuitously.

370. Was it handed over under any conditions or without any conditions; was any stipulation made by any of the great fire offices as to the maintenance of the existing stations?—I do not remember that there was a binding stipulation; there was a friendly understanding, but I am not sure that it was ever put into the form of a stipulation.

371. The area of protection I think you said is divided into four districts, A, B, C, and D?—It is.

372. Could you give the Committee the relative sizes of those areas in square miles?

miles?—I am afraid I can hardly do that, but they are shown on the map which I have brought with me for the purpose.

373. Mr. *Onslow.*] Could you let the Committee know by the next meeting the number of square miles in each of those areas?—I will endeavour to calculate it fully before the next meeting.

374. Mr. *Ritchie.*] I want to compare for a moment or two the appliances for the extinguishing of fires in those districts as compared with the estimates which you gave, and upon which the present existing state of things was founded; are you prepared to go into each district, A, B, C, and D?—Yes, I think so.

375. I should like to take A first, if you please; how many stations did you estimate for in A, in your lowest estimate, your 50,000 *l.* estimate?—I estimated for 24 stations.

376. How many stations have you existing in District A?—I have got 13.

377. That is 11 less than those you estimated for; what was the number of men that you estimated for in District A?—One hundred and three.

378. How many men have you in A?—Ninety-eight.

379. That is five less; how many engines did you estimate for?—Thirty-four.

380. How many have you?—About 25.

381. That is 9 less; you say that you have 98 men in District A; how many of those men are available at night, after deducting those men who have to attend the fire escapes upon which you do not reckon, and those who are on other watches, and those who may be reasonably supposed to be sick?—Last night I had 40 men available in that district.

382. Do you know the population of District A?—No, I cannot say the population.

383. May I ask you similar questions with reference to the B District; what number of stations did you estimate for?—The number of stations estimated for in District B was 19.

384. How many are there?—In District B we have eight stations.

385. That is 11 less than were estimated; now how many men have you?—We have 101 men.

386. How many did you estimate for?—In District B I estimated for 85 men.

387. So that you apparently have 16 men in District B?—Yes.

388. How many engines?—I estimated for 29 engines. I am afraid I can hardly give the distribution of the engines at the present moment, but there are about 19.

389. That is 10 less. Will you tell me how many men you had available last night in District B?—In the B District I had 53 men available last night.

390. Sir *James Hogg.*] I presume you mean extra beyond those at the stations?—Men not engaged on any watch.

391. Mr. *Ritchie.*] Those were the only men that you could depend upon to send out with the engines in case of fire?—Yes.

392. Sir *James Hogg.*] But you had other men on duty?—Certainly, but they could not leave that duty. Those are the men available for going out to a fire, without interfering with any of the existing duties of the night with the watches.

393. Mr. *Ritchie.*] Take the men on station duty; if you had to send them out with an engine you would have to close the station?—Yes, if there was nobody else at home that might happen.

394. And the telegraphic communication would then be stopped?—For the time, it would be.

395. With reference to the C District, that is the district embracing the whole of the Tower Hamlets, is it not?—Yes.

396. In the C District are situated all the docks in London, except one on the south side?—Yes, all the north side docks are in the C District.

397. And a vast number of warehouses?—Yes.

398. How many stations have you in the C District?—We have in the C District 10 stations.

399. How many did you estimate for?—I estimated for 20.

 400. That

Captain *E. M. Shaw.*

27 April 1876.

400. That is 10 less; how many men have you?—We have in the C District 80 men.

401. How many did you estimate for?—I estimated for 75.

402. And how many engines have you?—We have about 19 engines.

403. And how many did you estimate for?—Twenty-eight.

404. How many men were available last night in District C?—Forty men.

405. And that was in a district embracing the whole of the docks on the north side of London?—Yes, that district embraces all the docks on the north side except one which is out of our bounds, the Victoria Docks.

406. What docks does it embrace?—It embraces the St. Katherine's, the London, the East and West India Docks, the Millwall Docks, and also those smaller docks by the Canal entrances.

407. And an immense number of river side warehouses I suppose, others?—Yes, nearly the whole of the river side of that district is covered with very large warehouses.

408. Do you know as a fact that there are more fires in the east end of London as a rule than in any other district?—No, I think there are not; but that I can easily make out to-night.

409. Now with reference to District D, what is the number of stations?—We have 18 stations in District D.

410. How many did you estimate for?—Twenty-six.

411. So that there are eight less. What number of men have you?—We have 111 men.

412. And you estimated for how many?—I estimated for 87.

413. It is always understood that in those original estimates of yours there is no calculation for taking charge of fire-escapes?—None whatever.

414. And how many engines have you?—We have 34 engines.

415. How many did you estimate for?—I estimated for 34.

416. How many men did you have available last night?—We had 55 available last night.

417. So that to take you over the whole of the districts of London, you had, last night, 40 men in District A; 53 men in B; 40 men in C; and 55 men in D?—Yes, that is correct.

418. That is 188 altogether?—Yes.

419. Is that rather over or under your usual available number?—About the usual, I think; a little over, perhaps.

420. That is, for the whole 121 square miles, the number available last night?—Yes.

421. Are fires of more frequent recurrence in the day time or at night?—I think in the evening there are more. I may say that 64 was the average per hour per week in 1875.

422. What is the proportion of fires at night between 8 and 12?—There will be found a Table showing that in my annual report.

423. I make it, according to that report, that for the whole 24 hours the average is 64, and that between 8 and 12 the average is 114?—I have taken it by the simple hours. The greatest number of fires during last year occurred between eight and nine at night.

424. Whatever the proportion may be, we may take it for granted that by far the larger number of fires occur at night?—Yes, in the early part of the night. By far the greatest number of fires occur between seven in the evening and midnight.

425. That is the time at which you have the least number of men available?—Yes, that is the time at which we have the least number of men available.

426. And the whole number of men available during those hours last night was 188?—Yes.

Monday, 1st May 1876.

MEMBERS PRESENT:

Mr. Clifton.	Sir James Hogg.
Mr. Forsyth.	Lord Lindsay.
Sir William Fraser.	Mr. Locke.
Mr. Hankey.	Mr. M'Lagan.
Mr. Hardcastle.	Mr. Onslow.
Mr. John Stewart Hardy.	Sir Henry Peek.
Mr. Hayter.	Mr. Ritchie.
Mr. Herbert.	Mr. Young.

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

Mr. *Godfrey Lushington*, called in; and further Examined.

Mr. *G. Lushington.*
1 May 1876.

427. *Chairman.*] I BELIEVE that you wish to give some supplementary evidence with regard to the evidence which you submitted to the Committee on Thursday last?—Yes; in my previous evidence I believe I stated quite correctly the sources of income which the Board possessed for the maintenance of the fire brigade, irrespective of their powers to raise capital sums. Those sources have never been changed, if I except the substitution, by the Loans Act of 1869, of the halfpenny Consolidated Rate in place of the halfpenny poor's rate authorised by the Fire Brigade Act, and those sources remain the same now as they have always been; the only difference being in their yield, and chiefly resulting from the increase in value of property in the metropolis.

428. Does that refer to the capital?—No.

429. What have you to say with regard to that?—I think the evidence which I gave as to the capital of the Board, and their powers to raise sums of money, requires expansion, and, in certain respects, correction. Before I complete that evidence, I should wish to say to the Committee that it is no part of the function of the Home Office to administer any of those Acts beyond some merely ministerial duties in connection with the Fire Brigade Act. As the Committee will see, the evidence which I have to give respecting the legal powers of the Board to borrow, cannot be ascertained exclusively from the four corners of the Acts, and it is necessary for me, to a considerable degree, to refer to the general financial operations of the Board.

430. Have you taken steps to make yourself acquainted with those matters?—Yes, I have done the best that I can to give correct evidence to the Committee, but I think that the Committee will be of opinion that it is essential that my evidence should be corroborated, or, if necessary, corrected by further evidence from persons who have had special experience of these Acts, and I might suggest, of course, the Accountant of the Metropolitan Board, and also some officer of the Treasury, because the Treasury have exercised administrative powers with respect to these Acts, so far as exercising a control over the borrowing powers of the Board; and if any special question arises as to the interpretation of the Acts, I think it would be very expedient to take the opinion of the most experienced draftsman who drew these Acts. I believe Mr. Reilly drew most of them.

431. Will you make a statement to the Committee with regard to the historical changes which have taken place, leading up to what you want to say?—Yes, I think it would be better to start from the very beginning, and trace the changes historically.

432. So as to show what the Board's powers financially are?—Yes, what they have been from time to time.

433. With regard to taking over property of the insurance companies at the time of the passing of the Brigade Act, that was in 1865, was it not?—The Act

Mr. *G. Lushington.*

1 May 1876.

was passed in 1865, and it came into operation on the 1st of January 1866. By the 6th section of that Act all the stations, fire-engines, fire-escapes, plant and other property belonging to or used by the fire-engine establishment of the insurance companies in the metropolis were vested in the Board for all the estate and interest of the companies therein, without any payment, except that it was subject to all legal liabilities and obligations attaching thereto, including the payment of all pensions that had been granted to the members of that establishment according to a list furnished to the Chairman of the Board by the chief officer of the fire engine establishment.

434. The Committee would wish that the evidence which was given the other day should be referred to as shortly as possible, to bring out the points which you wish in connection with it. As I understand, in answer to this question you are beginning to trace back shortly the history on which the examination the other day took place, so as to show how proceedings which you were not aware of on that occasion affected the question, and also the view you had expressed then to the Committee. Is that so?—I could abbreviate my evidence, if the Committee expressed an opinion that they would wish me merely to state what I consider to be the powers of borrowing now possessed by the Board with regard to the fire brigade; but if they wish me to trace the different powers which they have had from different times for the purposes of the Fire Brigade Act, the statement must be longer.

435. Your evidence the other day led the Committee to believe that the financial powers of the Metropolitan Board for dealing with this question were regulated by the Act, and you expressed a doubt, I think, whether it would be necessary for them to apply to Parliament again for any further loans, because you believed that the powers existed under the Act, and that the money was not exhausted at present; was that so?—Yes; I can only say that I think that the evidence which I shall give will be useful to the Committee; and I think when I make my statement they will be able to judge exactly what have been the powers of the Board in the past, and what powers they have now. It is by no means a simple matter, I should say.

436. Sir *James Hogg.*] If there has been anything which Mr. Lushington is not quite sure about, this Committee ought to have it all placed before them quite clear, although I do not agree with some of the statements of Mr. Lushington?—I accede to that correction.

437. *Chairman.*] I will ask you whether you can so abbreviate it as to make it intelligible without tracing the history?—I think not, but I will be as short as I can. By the 6th section of the Fire Brigade Act, the Board was empowered if they thought fit to purchase the stations, fire-engines, and plant belonging to any parish, place, or body of persons within their jurisdiction. For this therefore they would have to pay. Then by Section 21 of the same Act power was given to the Board, with the consent of the Treasury, to borrow any sum not exceeding 40,000 *l.*; and the money was to be applied for the purposes of the Act. The application was not in terms stated to be for capital expenditure, but that may be inferred.

438. You mean that may be inferred from the Bill which was brought in?—Quite so. It should be remembered that the Bill was a Home Office Bill, not a Bill emanating from the office of the Board of Works. It may be taken therefore that 40,000 *l.* was the sum which the Secretary of State, who brought in the Bill and Parliament who passed it, estimated as sufficient for capital expenditure in the purchase of stations, plant, &c., over and above what the Board took over from the insurance companies without payment.

439. Is there any reference to fire-escapes in that?—The 40,000 *l.* was not intended to include money for the fire-escapes, as clearly appears from the speech of Mr. Baring, then Under Secretary of State, which will be found in Hansard, volume 179, pages 829 and 830. I need not quote what he said.

440. Was there any power of borrowing before 1869?—There was no change whatever during the years 1866, 1867, 1868, and the first half of 1869, and consequently the aggregate sum which the Board had power to borrow with the consent of the Treasury in that period of three and a half years was 40,000 *l.*

441. Was the interest outside that?—No, the interest payable upon any sum so borrowed would *pro tanto* diminish the income available for fire brigade purposes

poses. Then in August 1869 the Loans Bill became law; and that was a Treasury Bill.

442. What was the purpose of that Bill?—The general purpose was to effect a complete change in the financial operations of the Board; to convert existing securities into Consolidated Stock; to provide that in future no money should be borrowed except by the issue of Consolidated Stock, and to substitute a Consolidated Rate all over the metropolis in lieu of the other rates of the Board.

443. Were any additional borrowing powers granted under that Act?—Yes; Section 36 of the Loans Act of 1869 (and to this I would call the special attention of the Committee) is as follows: "The Board may create consolidated stock for the purpose of raising, in addition to the loans authorised by the Acts mentioned in the first schedule to this Act" (among the Acts that are there mentioned is the Fire Brigade Act), "such further sum as the Treasury may sanction for the following purposes; namely, first, for the purpose of completing the works authorised by the Main Drainage Acts, &c. Secondly, for the purpose of completing the works authorised by the Embankment Acts. Thirdly, for the purpose of providing station-houses, fire-engines, fire-escapes, and permanent plant for the purposes of the Fire Brigade Act." I should wish to make one or two observations on that section. First, that the sums the borrowing of which was authorised, were in addition to those previously authorised; that is, in the case of the fire brigade in addition to the sum of 40,000 *l.* authorised by the Fire Brigade Act. Next, that the object for which the sum was authorised to be borrowed was expressly stated to be for stations and permanent plant; and, thirdly, that the sum authorised to be borrowed for that object was, so far as appears from that section alone, unlimited save that the sanction of the Treasury was required.

444. Is that section now in existence in effect?—It has never been expressly repealed.

445. Was there any limit in that Bill?—As the Bill was brought in there was no limit whatever, but in the Committee a clause was inserted, now Clause 38, creating a limit of 10,000,000 *l.* That sum of 10,000,000 *l.* was the legal limit; but I will also explain to the Committee that, practically, there was a much narrower limit, and also that Section 36, although it is still nominally unrepealed, and though the legal limit has not yet been reached, has really, since the Act of last Session, ceased to be in operation so far as regards the Fire Brigade Act. Section 38, which imposes the limit, ought, I think, to be read. It declares that "The Board shall not, after the passing of this Act, borrow exclusively of any amount borrowed for the purposes of a loan to the managers of the Metropolitan Asylum District, an amount which, together with the amount actually owing by them at the passing of this Act, after deducting the market value at the date of the passing of this Act, of all sinking funds created in pursuance of any of the Acts mentioned in the first schedule to this Act, and remaining at that date in the hands of the Board, exceeds in the whole 10,000,000 *l.* sterling actually received by them." That is the legal limit.

446. That is not the limit, is it, under which they work?—I think that can only be explained by showing how that legal limit of 10,000,000 *l.* was arrived at. It will be found very clearly explained in the correspondence which has been laid before Parliament in a Parliamentary Paper of 1875, No. 327, Correspondence between the Chairman of the Metropolitan Board and the Treasury. At page 7 of that correspondence there occurs this passage in a letter from the Chairman of the Board, which I think I had better read:—"In the year 1869, when the Metropolitan Loans Act was passed, providing for the creation of a Metropolitan Consolidated Stock to be redeemed within 60 years, as the medium by which the Board was to raise the funds necessary for the great works entrusted to it by Parliament, a sum was named beyond which the Board's power to borrow should not extend. That sum represented as nearly as could be estimated the amounts of the then existing indebtedness of the Board, and of the liabilities which the Board had incurred, or would have to incur to complete the improvements which it had in hand, or which Parliament had already directed to be carried out. The sum in question was fixed, I need hardly remind you, after a thorough examination by the Lords of Her Majesty's Treasury and by Parliament, of the Board's financial position and responsibilities."

447. Have you any copy of the estimate that was then made?—Yes, I have, which

Mr. *G. Lushington.*

1 May 1876.

which I will now put in. This is a copy of the statement sent from the Metropolitan Board to the Secretary of the Treasury, of the 3rd July 1869, and it is as follows:—

	£.	£.
1. Debt now outstanding, less mortgage sinking fund in hand - - -		7,996,256
2. Further Loans sanctioned:	£.	
Mansion House-street and Embankment - - -	300,000	
This loan is negotiated and is receivable in 1870.		
Stingo-lane Improvement - - - - - -	40,000	
Park-lane Improvement - - - - - -	135,000	
Chelsea Embankment - - - - - - -	285,000	
		760,000
3. Further requirements:		
(*a.*) Can be borrowed under general borrowing powers of the Board for minor improvements - - -	80,000	
(*b.*) Main drainage and sewers, raisable on passing new Bill - - - - - - - - - -	907,000	
(*c.*) Fire brigade - ditto - ditto - -	50,000	
(*d.*) Add for contingencies on several improvements: the Acts of Parliament do not limit the amounts to be borrowed - - - - - - - -	70,000	
		1,107,000
TOTAL - - - £.		9,863,256

That estimate, I should say, was never laid before Parliament; it never was a Parliamentary Paper.

448. Does it show the indebtedness of the Board?—Yes; I think I should say that Mr. Ayrton, on behalf of the Government, who practically had charge of the Bill, read the substance of this estimate to the House, and to that extent he committed the House to it. You ask me as to the effect of the estimate, and I state this as an explanation of the mode in which the 10 millions was arrived at. The 10 millions was to represent the then actual indebtedness of the Board, and their prospective liabilities in the execution of the works already authorised. Their actual indebtedness was practically eight millions; therefore there were two millions in respect of their liability for works already authorised, and this two millions (and this is important for the Committee), all but a balance of about 136,000 *l.*, was appropriated, or rather expected to be required, for certain works against which certain items are set out, and amongst those items there is an item for the fire brigade of 50,000 *l.*, in addition, of course, to the 40,000 *l.* which had been authorised by the Fire Brigade Act. Thus, to a certain extent, the Treasury and Parliament, as well as the Metropolitan Board, proceeded on the basis that 50,000 *l.* was the additional sum to be spent on the permanent plant and stations of the fire brigade.

449. But that was not the legal limit, was it?—No; there was no legal limit in the Acts, except the general limit of 10 millions, which applied, of course, to all the works mentioned in the estimate; but on the other hand, there was nothing to bind either the Treasury or the Metropolitan Board strictly to the special sums which had been respectively assigned to the different works: only of course it is obvious that it was impossible for the Metropolitan Board to greatly increase the expenditure on any one item, except by doing so at the expense of some other of the works which were authorised; at the same time there was that margin of 136,000 *l.*

450. Did the Board limit themselves to that 50,000 *l.* then?—No. It appears (I am quoting now from a table which was prefixed to the Loans Bill of 1875) that the sum which had been spent up to that time was 115,000 *l.*; that is to say, under the original Act 40,000 *l.*, and under the Act of 1869, 75,000 *l.*, not 50,000 *l.*, as was mentioned in the estimate, but 75,000 *l.*, making together a total of 115,000 *l.* spent on the stations, and fire-escapes, and permanent plant of the fire brigade.

451. But even with that they had not reached their legal limit on the whole?—No. At that time it appears also from the same table (the Bill, I should say, was in 1875, No. 237) that there was then remaining unexhausted under the 10 millions limit, borrowing power to the extent of 440,000 *l.* odd for the purpose

purpose of the Board's General Improvement, Main Drainage, Fire Brigade, and Embankment Acts.

452. That was before 1875?—Yes, quite so.

453. And that Act was passed in 1875?—Yes; last Session there was passed the Act of 1875.

454. What were the objects of that Bill, and how did it affect those objects?—That Bill also affected generally the financial operations of the Board. The object plainly appears from the same correspondence to which I have adverted; it may be described as being to shift from the Treasury to Parliament the responsibility which formerly Parliament had delegated to the Treasury in the mode of sanctioning loans, to have an annual Parliamentary Budget, and also to provide that in future the period over which the repayment of loans was to be spread should, except in cases of exceptionally permanent works, be limited to 30 years instead of 60 years.

455. Are fire brigade purposes mentioned in that Bill?—Yes; I must call the attention of the Committee very particularly to the language of this Act, the 38 & 39 Vict. c. 65. It commences by reciting that "It is expedient that the raising of money by the Metropolitan Board of Works for the following purposes: (*a.*) Expenditure by them for general improvements and contributions; (*b.*) Fire brigade purposes; (*c.*) Loans to vestries and district boards and boards of guardians and some other bodies; be regulated, and that provision be made requiring that the borrowing powers granted to the Board by Parliament should for the future be limited both in time and in amount." The exact meaning of that will better appear, I think, from Clause 12. "Where the Board are desirous of obtaining a further Act empowering them to raise money, they shall cause the Bill for the same, as proposed to be submitted to Parliament, to be accompanied with tables giving such information as the Treasury require, for the purpose of enabling a comparison to be made between the rateable value of the metropolis and the liabilities of the Board.

456. Did the Act of 1875 contain any further powers of borrowing for those fire brigade purposes?—It did; but before I mention what those are I should point out that the recital, dealing with these three objects which I have mentioned, does not deal with all the three objects which were mentioned in Section 36 of the Loans Act, 1869. It does not mention the Main Drainage Act; it does not mention the Embankment Acts; although, of course, that 10 millions limit applied to monies raised by the Board for their general improvement purposes as well. Then comes Section 3, which, I presume, was in execution of the new policy which was to be inaugurated by the Act; namely, a strictly annual budget. It states that, "the Board may from time to time, up to the 31st day of December 1876, expend in providing station-houses, fire-engines, fire-escapes, and permanent plant for purposes of the Fire Brigade Act, 1865, such money as they think fit, not exceeding 15,000 *l.* The Board, in order to raise money for purposes of this section may, from time to time, create Consolidated Stock. The Board shall, from time to time, carry to the Consolidated Loans Fund such sums as the Treasury approve as being, in their opinion, sufficient to redeem, within 30 years from the date of the creation of stock, for purposes of this section, an amount of Consolidated Stock equal to that so created."

457. Then it limits them, and for any further borrowing they have to go to Parliament?—Quite so. Now, the important point to observe is that the Act of last Session did not repeal Section 36 of the Act of 1869, even so far as concerns the Fire Brigade Act alone; and also, as I stated just now, when that Bill was introduced there was still a margin of 440,000 *l.*

458. Could they have recurred to that Section 36?—I think not, but the section has not been expressly repealed.

459. Mr. *Ritchie.*] Could they have spent that amount of money up to the time of the passing of that Act?—Yes; Section 36 could not be wholly repealed, because it has still to be applied for purposes of main drainage and for purposes of the embankments, but not for general improvement expenses.

460. *Chairman.*] It was never repealed with regard to the fire brigade?—It was not.

461. What inference do you draw from that with reference to the present position?—The present position is this: that during this year the Board can raise 15,000 *l.*, and that after this year they cannot raise for the purposes of the fire brigade any sum except by obtaining further authority from Parliament.

Mr. G. Lushington. 1 May 1876.

462. Sir *Henry Peek.*] Did I not understand you to say that they are to present an annual budget, and that in that annual budget they might make provision to the extent of 15,000 *l.* year by year?—No; I said that the object of this Bill was to inaugurate the new policy of an annual budget, and that with respect to the fire brigade, the Act did carry out that policy for the year 1876.

463. With respect to the fire brigade only?—No, not only, but with respect to one or two other purposes which I need not mention.

464. *Chairman.*] With regard to finance, that annual budget shall be carried out in future by the Board, asking Parliamentary sanction for any money they want?—Quite so. This Act does not deal completely with all the financial operations of the Board; for instance, it does not mention at all the Embankment Acts, or the Main Drainage Acts.

465. How would you summarise shortly what you have said?—The summary of the evidence which I should wish to give as to the legal powers of the Metropolitan Board to provide stations, fire-escapes, and permanent plant for the fire brigade during the whole period of their existence, is as follows:—That at the commencement of the operation of the Metropolitan Fire Brigade Act on the 1st of January 1866, the Board took over without payment, but subject to existing liabilities, the stations and plant of the insurance companies; that between the 1st January 1866 and the passing of the Loans Act 1869, on the 9th of August 1869, the Board had the power of raising in the aggregate 40,000 *l.* for the purposes of the Fire Brigade Act, the interest, however, on any sum borrowed causing a corresponding diminution in the fire brigade revenue; that between the 9th of August 1869 and the Act of 1875, on the 11th of August 1875, the Board had nominally the power of raising for the purpose of providing stations, &c., and permanent plant, subject to the consent of the Treasury, any additional sum, provided that the total sum raised for that and the other authorised purposes did not exceed 10 millions—and that that limit has never yet been reached—but that practically it was incumbent on the Board before applying for a loan, and on the Treasury before consenting to a loan to pay a certain regard, I will not say how great or how small, but to pay a certain regard to the estimate made at the passing of the Loans Act, 1869, of the sums required for the several purposes.

466. That is for the embankment and the other objects of the Bill?—Quite so; that in that estimate the amount required for the fire brigade was provisionally stated at 50,000 *l.*; that under the Act of 1875, there was authorised to be borrowed up to 31st December 1876, for station powers and permanent plant the sum of 15,000 *l.*, in addition to the sum previously raised, namely, 115,000 *l.*, making a total of 130,000 *l.*; and that no further money can be borrowed for the purpose until further authority be obtained from Parliament.

467. Mr. *Ritchie.*] I do not know how you make 115,000 *l*; you had first of all power to raise 40,000 *l.*, and then 50,000 *l.*?—They were not bound to limit themselves to 50,000 *l.*; they have spent more than 50,000 *l.*; they have spent 75,000 *l.*

468. *Chairman.*] At the time when their powers of spending money were to a certain extent unlimited, excepting by the 10 millions?—Yes, legally unlimited.

469. Sir *James Hogg.*] With the approval of the Treasury?—Yes; each loan had first to receive the approval of the Treasury; and it is also to be remembered that the Bill of 1865, authorising a loan of 40,000 *l.*, was a Home Office Bill, and the Act of 1869, which for fire brigade purposes was based on the assumption that 50,000 *l.* more was required, and the Act of 1875, authorising a loan of 15,000 *l.*, were brought in as Treasury Bills, so that all those sums have been fixed practically by the Government and not by the Board; and lastly, that since the Act of 1869 all interest on sums borrowed, whether borrowed before or after the Act of 1869, have not been a charge on the revenue applicable to the maintenance of the fire brigade.

470. Mr. *M'Lagan.*] As I understand you, the Metropolitan Board had unlimited powers to borrow up to 1875 any sum that they chose within the limit of 10 millions pounds for fire brigade purposes?—For fire brigade purposes, and main drainage, and embankment, and general improvements.

471. Therefore they could borrow 75,000 *l.*?—They could. Let me put it in the strongest way that I can. They could legally have spent two millions of money

money upon the fire brigade, and they could legally have spent not one farthing.

472. But if they spent the two millions, the interest upon that two millions must have been taken off the annual revenue for fire brigade purposes?—No.

473. I understand you to say that the interest of the 15,000 *l.* which has been spent is deducted from the revenue for fire brigade purposes?—No; before the Act of 1869 the interest was deducted from the revenue applicable for fire brigade purposes.

474. But they were not bound to do that, were they, by the Act of Parliament? —Yes, they were by the Act of Parliament. I can refer you to the section if you will allow me. The 19th section of the Fire Brigade Act, the 28 & 29 Vict. c. 90, states that "for the purpose of defraying all expenses that may be incurred by the Board in carrying into effect this Act which are not otherwise provided for" (that refers to the Treasury and insurance contributions, and so on), "the Board may from time to time issue their precepts to the overseers of the poor of every parish or place within the metropolis" to levy the rate. Therefore, that includes the interest upon the 40,000 *l.* raisable under Section 21 of the same Act. The law with respect to the repayment of interest on monies after 1869, is Section 22 of the Loans Act of 1869, which states that "the Board, for the purpose of paying the dividends on, and redeeming the Consolidated Stock, and also of defraying the expenses authorised to be incurred, and incurred by them in the obtaining or the execution of the Acts mentioned in the first schedule to this Act, or any of them" (the schedule included the Fire Brigade Act) "and of defraying the sums required for the payment of the principal and interest of, and the sinking funds for, any securities granted by the Board for the purposes of those Acts, or any of them, before the passing of this Act, shall (in lieu of all rates or assessments authorised at the passing of this Act to be assessed by them generally over the metropolis) from time to time assess and raise a rate to be called the Metropolitan Consolidated Rate, in this Act referred to as the Consolidated Rate." Then it states that they are to do that by means of a precept. "Every precept issued by the Board for the purposes of the Metropolitan Consolidated Rate shall specify, first, the proportion of the amount named in the precept which is required for the purpose of paying the principal and interest of, and sinking fund for, securities granted by them before the passing of this Act, and the dividends on, and the sums required for, the redemption of consolidated stock under this Act, and, secondly, the proportion of such amount which is required for all other purposes of the Board." Therefore in future, and after the passing of that Act, interest upon the sum borrowed has been paid out of the Consolidated Rate, and has not been taken in diminution of the revenues applicable to the purposes of the fire brigade.

475. Then, as I understand you, the only interest that deducted from the revenue for fire brigade purposes is the interest upon the 40,000 *l.*?—No, that is not deducted; it was deducted before the Act of 1869.

476. They have the power of deducting, but it is not deducted now?—No, I should say they have not the power.

477. Sir *James Hogg.*] You stated that the Board legally can borrow two millions and spend it upon the fire brigade; but if they had done so there would have been no money left to carry out the improvements?—Certainly.

478. Therefore if they had wished to do such a thing the Treasury would never have sanctioned it?—Certainly not.

479. Otherwise they would have left themselves without the power of carrying out the various works?—Yes.

480. So that practically the Board would never have thought of doing so?—No; in fact no one of those objects could be considered entirely by itself; they all had to be considered together.

481. Everything has been brought year by year with every loan before the Treasury, and the whole thing carried out with their sanction?—Yes.

482. And now it is brought before Parliament according to this last Act of 1875?—Yes.

483. Mr. *Ritchie.*] Would it have been in the power of the Metropolitan Board, before the passing of this Act of 1875, when their borrowing powers were still only limited by 10 millions, to have made any application to the

Mr. *G. Lushington.*
1 May 1876.

the Treasury for some prospective amount which they would have considered it desirable to lay out for any one of those purposes, or must they have incurred an expenditure within the limit before 1875, or could they have said, "We find that in order to place the fire brigade in a proper position we require so many more stations, which will cost so much more money;" could they have done that before the passing of the Act of 1875, although they had not actually incurred the expenditure?—Certainly; they had to go to the Treasury and get their consent to the loan; they would not incur expenditure, I presume, until they had money to pay for it, and they could not get money except by loan, and they could not have issued a loan except with the consent of the Treasury.

484. Then under their powers they could have gone to the Treasury before the passing of the Act of 1875, and have said, "We want 50,000 *l.* or 100,000 *l.* to complete our stations for the fire brigade; will you sanction that expenditure"?—Certainly, and then the Treasury would have said "Well, but what other liabilities have you?"

485. Sir *James Hogg.*] But, practically, that 100,000 *l.* would have been taken away from other improvements which the Board were bound to carry out by Act of Parliament?—Yes; there were the two millions applicable to, we will say, five purposes.

486. All the sums have been specified in the Acts of Parliament, and I think you stated in your evidence in chief that there was only 136,000 *l.* balance beyond what was allocated?—The first sum of 40,000 *l.* and the last sum of 15,000 *l.* were specified in Acts of Parliament; but the intermediate sum of 50,000 *l.* was not specified in an Act, but mentioned to the House of Commons by Mr. Ayrton, who had charge of the Bill.

487. Out of that 136,000 *l.* a certain sum was spent in the way the honourable Member has asked you?—Yes, 25,000 *l.*

488. If you had asked for 100,000 *l.*, that would have taken away a certain portion of money which was allocated to other improvements?—Yes, if the margin was then expended.

489. Sir *Henry Peek.*] I understood you to say that the margin was 136,000 *l.*?—Yes.

490. Was any part of that 136,000 *l.* engaged?—No, none; it was entirely free. Apart from the question of margin, any further appropriation beyond 50,000 *l.* could, of course, be only deducted from the other works.

491. Mr. *Ritchie.*] It does not come within your knowledge how much of that margin was actually used up?—No, I cannot give information upon that.

Captain *Eyre Massey Shaw*, called in; and further Examined.

Captain *E. M. Shaw.*

492. *Chairman.*] HAVE you prepared certain returns which the Committee asked you to do on your former examination?—Yes, I have got them ready for the Committee.

493. Those are the reports which you made from time to time to the Board?—Yes; those are the reports which have been made from time to time during the last 10 years to the Fire Brigade Committee of the Board under which I serve, and to which I report. I have gone through all my papers as far as I could possibly do during the last three or four days, and I have taken out from them this selection, which I think will contain at least everything that I can find of what the Committee wants in that way. Many of those reports have been adopted, many have been adopted in part, and some have not been adopted at all. But I am not quite clear whether I have exactly understood the views of the Committee as to what is wanted.

494. What I think the Committee wished was to obtain the reports which you have made from 1866 down to the present time with regard to the state of your brigade, and any recommendations which you have made for the alteration or improvement of the force, so that they might then obtain from an officer of the Board the way in which those reports have been dealt with, unless the reports themselves show it?—These papers contain all that information so far as I am able now to get it, but I can hardly profess that they are entirely complete. If there

there are any omissions in them, I think they will be found in the books of the Committee. Every paper which I present here, so far as I am aware, appeared before the Committee.

495. Those are all the records with which you could furnish the Committee of recommendations which you have made from time to time to the Board?—Those are all that I can lay my hands upon at present. I have done my best to collect a large number of them during the interval (*delivering in the same*).

496. Mr. *Ritchie.*] So far as you know, there are none of importance that are not there?—I think it is very likely that there will be none of importance which are not there.

497. Mr. *Onslow.*] Have you specified the recommendations which have been adopted, and those which have not been adopted?—I have endeavoured to do so, but I find it is impossible for me from my records at home; because in many cases it became necessary to postpone the consideration of those reports, and afterwards when the reports were adopted they were not adopted in exactly the same terms as the wording of the report. Perhaps I may have asked for 20 men at a certain time, and the consideration of my report may have been postponed for a month, and at the end of that time I may have got 10 men, and a few weeks later I may have got three, at another time seven, and so on; and my reports may have been practically adopted at various times, but not exactly according to the wording of the report, in such a way that I could lay my hand on it and say that it had been adopted.

498. *Chairman.*] The books will show how the details which were recommended in those reports have been carried out?—I believe that the books will show the whole course of proceeding in connection with these reports.

499. Mr. *Onslow.*] What was the date of your last report?—My last report asking for a considerable increase was in 1872.

500. *Chairman.*] I see that you have put in copies of reports of a later date than that?—Yes, I have made many reports since that time.

501. Mr. *Forsyth.*] Do you make a regular annual report besides these reports from time to time?—Yes, I make a regular annual report. Will you allow me to say in connection with these reports which I have handed in, that there have, at all times, been a certain number of what may be called semi-official reports, letters written by myself to individuals, who have been chairmen of the fire brigade committee at various times, and that those letters, so far as I am able, I have kept back because they are not on the books of the Board; they are, as it were, private advice from me to the chairmen of the committee, and in every case, so far as I have been able to mark them, I have kept back such reports.

502. *Chairman.*] You treat them as confidential communications between yourself and individuals?—Quite so; and I also treat these reports which I have handed in now as confidential communications, but in a somewhat different sense. My letters to various chairmen of the committee have never appeared on the books of the Board.

503. The distinction which you would wish to draw is that you submit to the Committee these reports which have already been dealt with one way or the other by the Board, and which have appeared on the books?—Yes, by the committee of the Board under which I specially serve. I have endeavoured to keep back all the others, and, so far as I know, I have succeeded.

504. Mr. *Ritchie.*] Your original estimate provided for more than four districts, did it not?—It provided for six districts.

505. Can you give us the areas and population of those districts, A., B., C., and D. now, which we were speaking of on the last day of the meeting of the Committee?—I do not pretend to be strictly accurate in this, but I think I shall be quite sufficiently accurate for the purposes of this Committee. I consider that our A. district comprises an area of 27 square miles, covered by 115,000 houses, and a population of 900,000.

506. You do not know the value of the property in district A.?—No. I can say something about the total value of the property, but not in my separate districts. The B. district I estimate at nine square miles, 73,000 houses, and a population of 575,000. The C. district I estimate at an area of 16½ square miles, 125,000 houses, and a population of 925,000. The D. district I estimate at 68½ square miles, with 150,000 houses, and a population of 1,100,000; making a total in round numbers of 121 square miles, 463,000 houses, and 3,500,000

Captain *E. M. Shaw.*

1 May 1876.

3,500,000 inhabitants. This allows about 76 persons to every 10 houses. In the A. district it is about 78 persons for every 10 houses, in the B. district it is about the same, in the C. district it is about 74 persons for the same number of houses, in the D. district about 73, and on the average of the whole it may be said to be 76. That has always been about the rate for the last 50 or 60 years in London; more than seven, and less than eight, persons to each house.

507. Just in order to connect the one with the other, I think you said that in A. you have 40 men available, 53 in B., and 40 in C., and 55 in D.?—That was the evidence I gave on the last occasion. It varies, of course, from day to day, but that is approximately correct for last night also.

508. I should like to go a little further into the question affecting the C. district; you spoke, I think, of the C. district as embracing most of the docks and the river side warehouses?—Yes.

509. But in addition to that district in which those docks and warehouses are situated, of course the C. district, or the eastern district, embraces a much larger and wider area altogether?—Yes, it is a very large area.

510. In the C. district is situated the whole of the borough of the Tower Hamlets, is it not?—Yes.

511. In the borough of the Tower Hamlets are situated all those docks and warehouses which we were speaking of?—I believe so. I do not exactly know the boundaries of the Tower Hamlets, but I believe that is correct.

512. Taking the district of the Tower Hamlets, do you know how many available men you have got within it?—I expected to be asked that question, and I have prepared it.

513. Will you state to the Committee the number of available men?—In that district which I believe to be the Tower Hamlets there are 38 men altogether.

514. And then after deducting the men on fire escape duty and on the various watches, and taking an estimate of those who may be supposed at some time or other to be sick or unwell, how many would you deduct from the 38?—Perhaps 24.

515. May we take it as correct that within the whole of the Tower Hamlets, embracing as it does all the docks and warehouses, you have at night only 14 available men?—Yes, about that; but I am speaking now only of the force which actually is stationary within that district, not including the stations which border on the district, and which can pour their help from every side from telegraphic intelligence.

516. But you are speaking of stations and men within the Tower Hamlets itself?—Yes.

517. I asked you as to the number of fires in the C. district the other day; may I ask you now whether there are more or less in that district than in any other?—I find that taking the C. district proper, and strictly confining one's self within it, they are more in number.

518. Are they more or less severe than those in other districts?—In many cases they are very severe, those on the water side especially; but there is a large population in the C. district which lives in very small houses in the neighbourhood of Bow and such places, and although there are very important factories there are also a great number of houses which could have fires, which would be of very little general importance. I can give the number of fires at each district if the Committee desire it, as I have made them out; I can give them for one year or for 10 years.

519. You do not include in that, I suppose, anything for steam-engines on the water?—Yes; but there has been no question asked me now in connection with steam engines on the water. The Tower Hamlets has got strictly no steam-engine on the water, except perhaps the one in Limehouse Reach might be counted one.

520. Mr. *Hankey.*] The river steam-engines are a most important part of the protection, surely, of the Tower Hamlets; that part which includes the docks especially?—Yes.

521. The river provision is a very important part, that which protects property from fire in the neighbourhood of the docks, is it not?—We have a barge with an engine on it in Limehouse Reach, a little to the south of the West India Dock entrance; that might be counted in the Tower Hamlets, and that would

would make an addition of four men to the number which I have given, and I do not see why that should not be counted.

522. Mr. *Ritchie.*] That is 18 men that you have available in point of fact?—Of those four men, some should keep the watch; they could not go away from their station.

523. Now will you be good enough to give the Committee the number of fires in all the districts for 10 years?—In 10 years we have had 3,750 fires in the A. district; in the B. district we have had 3,876; in the C. district we have had 5,026; and in the D. district we have had 3,255; making a total of 15,907 in the 10 years.

524. Sir *James Hogg.*] Have you got the amount of serious fires and others?—That is the whole number year by year, but I could not get it into a 10 years' report without complicating the figures, but I will do so in a separate report if the Committee desire it. The per-centage of those fires occurring in the different districts is as follows: A. has had 24 per cent. of fires in the last 10 years; B. has had 24 per cent.; C. has had 32 per cent.; and D. has had 20 per cent.

525. Mr. *Ritchie.*] Notwithstanding that you have 32 per cent. in C., which is a much larger per-centage than in any other, have you as many men in the C. district as you have in any district in the metropolis?—Yes, I think so, considering the number of stations.

526. Is there any understanding or any regulation as to the mode of proceeding with reference to calling in assistance from other districts when a fire takes places in any one district. Take a serious fire, for instance, in the B. district, what would be, generally speaking, the mode of proceeding as to drawing men and engines from other districts?—The mode is very simple indeed. The officer at head quarters is bound to send on all the men that he considers necessary. We are not strong enough to be able to lay down a fixed rule that at great fires one-third of each other district, or one-half, or one quarter, shall go on; we are obliged to leave it to the officer on duty at head quarters to send on whatever help he considers necessary, judging by the messages which he receives back from the fire. That system is one which works perfectly satisfactorily.

527. In the old fire brigade time there was, I find in the paper, some rule laid down as to the number of engines to be taken from one district to the other; that is not adhered to now?—No, and I doubt whether it was ever adhered to; it was a theoretical rule, laid down by somebody or other who could not work exactly up to it. At all events, in my experience, it has never been worked, and I do not think it could ever safely be worked, unless the force were increased to a very great extent.

528. Are the fire-engine stations in communication with the police stations?—No, except the head-quarter station; the head-quarter station, or the station which acts as head quarters at Watling-street, is in communication with the head quarters of the police at Scotland Yard.

529. A policeman, seeing a fire, does he go and report it to his station first, or how does he communicate with the nearest fire-engine station?—I can hardly answer what their orders are, but I think that in every case they communicate as quickly as possible with the fire-engine station and the fire-escape station, if it is by night, and the turncock and their own nearest station, but in what order I am unable to say; I know that they make every possible effort.

530. Would not it be very advisable, if possible, that the police stations should be in communication with the fire-engine stations by telegraph?—Yes, I think it would be exceedingly important, and if you will allow me to correct the answer I gave just now, I said that we were not in communication with any police station except that at Scotland Yard, but I remember now that our Woolwich station is connected also with the police station at Shooter's-hill, which makes a second connection.

531. Of course your district on that side of the river is very wide, and very much spread out?—Yes.

532. And, therefore, it is very advisable that there should be a communication, at least, on that side of the river; but you think that it would be very important that all police stations should be in communcation with the fire-engine stations?—Yes, it would make a very great increase of our places of call, to which persons could come and give notice of a fire.

533. Of course, it is of the greatest importance, as you said before, that the

Captain *E. M. Shaw.*

1 May 1876.

engine should reach the fire as quickly as it possibly could?—That is the great point.

534. To carry out that principle thoroughly a large number of small fire-engine stations, I suppose, would be a material assistance?—Yes, a large number of small stations would materially assist, provided it is safe to distribute the force through them. That, of course, involves a very great expenditure of force. You have to spread the men out to a great extent, and those men are not quickly available for anything heavy happening.

535. Did you not provide in your first estimate which you furnished to the Home Office for a very large number of small stations?—Yes, I did.

536. Was not that really the essential difference between your first estimate and your third one?—Yes, that was about the most important difference between them; but I also provided for small stations in the last one.

537. But not to anything like the same extent?—Not to the same extent.

538. Has your recommendation with reference to the number of stations, even in your third estimate, been anything like come up to?—No, it has not.

539. You provided, I think, for 89 stations?—Yes.

540. How many have you altogether now?—There are 53, including the four on the river.

541. In the last estimate which was adopted you provided, did you not, for 33 large and 56 small stations?—Fifty-two large and 37 small, making 89. There are no small stations in the sense known there as 37; those are marked as 21 large, 31 small, and 37 contract. There are none of the third item at all. We have no contract stations.

542. What do you mean by contract stations?—Stations which would be manned by persons in the neighbourhood, we supplying them with gear. It was at that time intended by me to effect a very large increased distribution without spreading the men too far.

543. Could that same course be adopted now with advantage, do you think?—Yes, I think it might. I see no reason why we should not extend in that direction.

544. Supposing there were those small stations, could they, do you think, be advantageously worked by the police?—Yes, I think so, but I think we can do better than that with the police. I only provided for 37 small stations, to be worked by mechanics, carpenters, and such people. I think that the details of that will be found in some of the reports which I have handed in to the Chairman to-day.

545. Mr. *Onslow.*] May I ask you what you mean by large stations and small stations?—A large station is a station which could always provide help for sending away to a distance; a small station is one which could provide for local purposes chiefly, and could only with difficulty send away help.

546. Mr. *Hardcastle.*] You stated in your last recommendation that there were 52 large stations and 37 small stations?—I am afraid that the terms here have got a little wrong, and are liable to confusion.

547. You subsequently stated, as I understand, that by 37 small stations you meant what you have since called contract stations?—Yes.

548. Then, as a matter of fact, there are at present 53 stations, all of which are larger than the contract stations?—Yes.

549. I want to ask you whether the 52 large stations which you recommended are embraced in the 53 which actually exist, and whether the only difference between your recommendation and the state of things which is actually existing is that the 37 small stations which you recommended do not exist?—To a great extent practically that is so.

550. Mr. *Ritchie.*] Then the Board have carried out your recommendation with regard to large stations, but not with regard to small ones?—Practically so; not precisely, but sufficiently so, I think, for the purposes of this inquiry.

551. Do the firemen live at the stations?—We profess to have them living at the stations; we profess to provide them accommodation in the stations.

552. I find that a resolution was passed at the Metropolitan Board to the following effect, when they were taking over the brigade: the 24th of November 1865 was the date of the meeting of the Board at which this resolution was passed: "Resolved, on the motion of Mr. Freeman, That for the present and until

until further order the whole of the men to be employed in the Metropolitan Fire Brigade to live at the stations to which they are attached;" has that been acted upon?—Yes, so far that the men must live either in the house or in houses adjacent.

553. But they do not actually live at the stations to which they are attached?—Not under the roof actually; there are many cases in which it is impossible to find them accommodation.

554. Does not that resolution lay stress upon the point that the firemen should actually live at the stations?—Yes, I should like to have every man living under the roof of the station.

555. Have not a great many stations been built by the Metropolitan Board since this resolution was passed?—Yes, a great number of stations have been built.

556. Might I say 20 or 30?—Yes, at least.

557. And has accommodation been provided for the men employed at each one of those stations that have been built?—Not sufficient for our purposes.

558. So that since that resolution a number of stations have been built by the Metropolitan Board without containing the accommodation necessary to carry out their own resolution?—Yes, I suppose that is the case.

559. I understand you to say that it is a necessity that they should live near their stations if they do not live in the stations; is that so?—It is absolutely necessary for the business that they should be within call.

560. Have you any limit of distance?—We have tried to limit them to any distance which does not occupy more than one minute in running to them, but it is impossible to get them always within that distance. There are many cases where we have them living a little further away.

561. Do you find any considerable difference, or any difference at all, as to the time of turning out to a fire where the men live at the stations and where the men live away from the stations?—Yes, very great difference.

562. What is the usual time of turning out to a fire where the men live at the stations?—Where the men live in or alongside the stations they can turn out in three minutes and a half with the engines and everything complete.

563. What length of time do they take where the men have to come to the stations?—We are obliged in many cases to allow them a little more than that.

564. Of course it must vary, but within what limits at those stations do the men turn out?—I have several stations which occupy four minutes in turning out, several which occupy four and a half minutes, several which occupy five minutes, some which take five and a half minutes, and six minutes, and I have one where they take six and a half minutes; those are stations on the land. For the stations on the river we are obliged to allow a considerably longer time.

565. Of course every minute that they take in turning out is of the utmost importance in a case of that kind?—Yes, every minute is of the greatest importance, and we calculate it even by seconds. We have altogether 26 stations, at which we are obliged to allow an extra amount of time for turning out.

566. How do you communicate with the men who are living away from the stations?—We have to send a man out from the stations to run for them. There are a few cases where we are fortunately so situated that we can place a bell-wire between the station and the lodgings.

567. I suppose in addition to the time that it takes the men to come, it diminishes your power of getting your gear and everything ready having to send the men away for other men, does it not?—Yes; in some stations it does affect us in that way.

568. Is it a fact that some of your men belonging to your head station at Watling-street live in Southwark Bridge-road?—Yes, it is.

569. Could you not get accommodation for them nearer than that?—No, there is no accommodation to be got nearer.

570. How do you get them from there when you want them?—Those officers who live in the Southwark Bridge-road we are obliged to make special arrangements for. They arrange amongst themselves to be 24 hours on duty at a time, and they come on and relieve each other for meals, and they make various other arrangements, so as to enable them to carry on the work.

Captain *E. M. Shaw.*

1 May 1876.

571. That certainly diminishes the force that you can rely upon at any moment, does it not?—Yes, at that station.

572. Is it a difficult thing, as a rule, for the men to get lodgings near the stations, when you do get them?—Yes, it is one of our very great difficulties with the young men. They get married, and of course they are entitled to live anywhere within a reasonable distance, and they have to pay sometimes very heavy rents. We pay rents for about 133 men at present who are living out, who are entitled to lodgings at the expense of the Board, and afterwards to be charged rent for them; and we pay, I believe, nearly 2,000 *l.* a year for those lodgings. That will probably give some idea of the expense to which those young men are put who have to provide lodgings for themselves.

573. Is it a fact that in some cases a man of the lowest grade even would have to pay as much as 8 *s.* a week for his lodgings; has that ever been brought to your knowledge?—I do not know a case where it is so bad as that; I know that they complain a great deal about the high rents, but we meet their cases as far as it is possible to do so. We send the young married men to such stations as have houses or lodgings in the vicinity, which they can obtain at a moderate cost. We do all that we can to meet their cases in that way.

574. What sort of accommodation have you got at Watling-street; have you got accommodation for turning out your engines properly, and accommodation for lodging your family men?—We can turn out in 3½ minutes in Watling-street, without fail, at any hour, day or night; the accommodation in Watling-street is very limited; but that question, I think, will be found fully accounted for in the papers which I have handed in to-day. The matter is under the consideration of the Board, and no doubt will be attended to.

575. By enlarging Watling-street?—The question of a head quarter's station. Watling-street has been made hitherto to act as a head quarter's station; but it never has been a proper head quarter's station; the providing of a head quarter's station is a question which is now under consideration by the Board, and will be found in those reports.

576. How long has it been under the consideration of the Board?—For a long time; it may be said from the commencement of the establishment.

577. Mr. *Hankey.*] Do you mean from 1865 to the present time?—It has not been continuously under consideration, but they have known about the condition of things, and it is now under their consideration, and has been for some time.

578. Mr. *Ritchie.*] Is it more immediately under the consideration of the Board now than it has been at any time previously?—I can hardly answer that question, but I believe it is so; I do not know what the last resolution on the matter was, but I know that there was a resolution passed which will be found from the books of the committee.

579. Can you tell me the last time that you brought this question of the head quarter's station to the attention of the Board, in your report?—Very recently.

580. Was it in your last report?—No, not in the last report to the committee; that was 10 days ago, The report itself has been handed in to-day, and the date will be found there; it is a very recent report.

581. How many stories are there in the house in Watling-street?—There is a basement, which is used as a stable chiefly, a ground floor, a first floor, a second floor, and a third floor; that is in the principal house. In the other house there is a great deal less than that.

582. Is there any way of increasing the accommodation at Watling-street to house all your men at it?—No, that is quite impossible, without taking in a large number of very valuable houses in the neighbourhood. There would be no object in doing that.

583. One of the honourable Members would like to know whether it is practicable to accommodate more persons in Watling-street than are now accommodated, by building up higher?—No, I do not think so. Of course if they were unmarried men it would be quite possible that we could take in all the men that we have now, but it is the families which make such difficulty with us. Besides that, I do not think it would be desirable to enlarge Watling-street, and turn it into a head quarter station, for which it is perfectly unfit, unless half an acre, or a quarter of an acre of ground were added, which would be

be so costly in the middle of London that I do not think it would be obtainable. Besides that, there is a certain amount of noise inseparable from a well-conducted head quarter station of the fire brigade, which I suppose would not be tolerated in the City of London; we have no workshop there now, but if we had a workshop, as we ought to have, I think that the inhabitants would object very much indeed.

584. It is very advisable to have the head quarter station as near as possible in the centre of London, is it not?—Clearly so; but with good approaches and wide streets.

585. Have you formed any idea where such a spot could be fixed upon?—Yes, all that will be found amply stated in the reports.

586. Could you give us the dates of the reports in which you have drawn the attention of the committee to this?—There are the records of my own office. It is very hard to recollect the dates for so many years, but I think that all that will be given satisfactorily, and if not it can be supplemented either by my own books or by the books of the committee; I think it will be found that there is practically no omission in these reports, or if there is, it may be during the first months when we were reporting by way of letter to the Main Drainage Committee of the Board, and in fact I could find none of these reports to send to the committee.

587. Sir *Henry Peek.*] Would there be an official report in the books of the Metropolitan Board?—Everything is sent up, or is intended to be so.

588. It is not of this semi-confidential kind?—No.

589. Mr. *Ritchie.*] Did I understand you to say that the committee passed a resolution at their last meeting with regard to the head-quarters' station?—Not at their last meeting, but at a meeting that was rather recent, of which I do not remember the date.

590. Were you present?—Yes, but whether they decided to do something or to consider it again, I cannot say. There is a great deal of business, and I do not always recollect what they decide, but it will appear from their minutes.

591. In the case of resolutions which are passed by the committee with regard to the fire brigade, are not copies sent to you?—No, only in cases where I have something to do. For instance, when I ask for any new machinery, and they pass an order that I am to obtain it, the order then comes back to me in writing, otherwise I have no record of any of their proceedings, but I am present at their meetings.

592. Have any of the old stations of the London fire brigade been closed?—Yes, several.

593. Some of them in rather important positions have been closed, have they not?—Yes, some.

594. For instance, there was a very important station in Wellclose-square, just close beside the docks; that was looked upon as rather an important station at one time, was it not?—It was a very important station. That was closed, and another was built in place of it at, say, half a mile further up.

595. Half a mile further away from the docks?—Yes, further away from the docks, certainly, but more up in the useful parts of the district, with better opportunities for running through the district.

596. Was not there another station in the immediate neighbourhood of that new station also abolished?—Yes, there was.

597. So that at the time that a station existed in Wellclose-square there was also another one in Whitechapel?—There was.

598. The Whitechapel one and the Wellclose-square one were abolished, and a new one built in the immediate vicinity of the Whitechapel one?—Yes, quite so.

599. So that two stations were closed, and one was opened?—Yes.

600. And one of those two stations was in the immediate neighbourhood of the docks?—Yes.

601. The one that was opened in its place was half a mile further away from the docks?—Yes.

602. What was the object of closing the Wellclose-square station?—The place was in a very bad condition, and a question arose as to what should be done with it. It was found to be in such a condition that the Board determined to get rid of it altogether.

Captain *E M. Shaw.*

1 May 1876.

603. But could not they have still retained the ground, and built another station there?—They did not think that the spot was a spot for another station. It should have been down in Wapping, if they had decided to do so.

604. If you had been closing Wellclose-square, you think that it would have been better to have built one in Wapping?—Yes; I think if there were men available enough, it would have been better to have added one at Wapping, and to have done what the Board has done now.

605. Built a new station in the place of the Whitechapel one, and built one in Wapping in the place of the Wellclose-square one?—Rather the other way. I should have built a larger station in the place of the Wellclose-square one, which was always considered the working centre of the district, and have removed the Whitechapel one down to Wapping.

606. But, at any rate, you would have built a station in that district, the Wapping and dock district?—Yes, I think so; but I think that the district has not at all lost by this change.

607. It must take an engine longer to come from Whitechapel than from Wellclose-square, if any fire takes place at the river side?—Yes, it does, but not very much longer.

608. Are there any other important stations which have been closed; Farringdon-street has been closed, I think?—Yes, the Farringdon-street station has been removed up to near Coldbath Fields.

609. Was it with your advice that the Farringdon-street station was closed?—No, I do not think it was.

610. The Farringdon-street station was rather an important one, was it not?—Farringdon-street was a very important station.

611. Did you make any objection to the proposal to abolish the Farringdon-street station?—I do not know whether I reported an objection, but I certainly stated an objection.

612. If you made any objection you were overruled?—Yes; I think I must have sent in a statement, but I cannot answer that.

613. You think it is certain that you made an objection, and that that objection was overruled?—I think so, but I cannot say positively.

614. Do you think that a dangerous gap has been left by closing that station?—I think it is a very large gap.

615. Do you think that it is a dangerous one?—Yes, more or less.

616. Your original estimate of 351 men, stations, and engines, was based upon taking into calculation the then area of population?—Yes.

617. Your lowest estimate provided, did it not, for altogether 351 men?—That was so.

618. Deducting fire-escapes which were 106, you had 245 men?—Yes; but you must deduct more than 106 for the fire-escapes.

619. I am now taking the gross number of men that you had as compared with the gross number of men that you estimated for at that time; you did not estimate for any fire-escape men I understand?—I did not estimate for any fire-escape men.

620. So that in the 351 men that you estimated for there were no fire-escape men?—That is so.

621. If we add 106 men to your 351, it would give 457 men as your original lowest estimate?—Yes; but that 106 will not represent enough men for the escapes; 106 men cannot do 106 duties every night for the year. There must be an allowance made for rest, for time off, for sickness, and for leave,

622. How many would you say to work the fire-escapes?—Add at least 24, we will say.

623. That is 130?—Yes, at least.

624. So that we have to add that 130 to your original estimate of 351 men?—Yes, in order to work this additional number of escapes, I think so.

625. So that your original estimate stands at 481 men, with the addition of the fire-escape men?—Yes.

626. How many men have you gross now at this moment?—We have 397 to-day.

627. So that you have now actually 84 men less than you originally estimated for?—Yes.

628. And what has been the increase in the population of London since that time;

time; could you give us the per-centage?—I cannot give it quite accurately as a per-centage, but I should suppose that it must be fully 20 per cent.

629. It is about 17 per cent. really, I think, and the number of houses have also increased in about the same proportion?—Yes, I think so. The question of the proportion of the population, and of the houses, has always been constant within London in my recollection.

630. I think I may take it that with an increase of 17 per cent. in houses, and an increase of 17 per cent. in population, you have 84 men less than you estimated for in 1865?—Yes, calculated in the way that has been done here, that has been so.

631. Did you call the attention of the Board at the time of taking over the fire-escapes that you had not provided for a staff for it in your calculation?—Yes, they knew that very well.

632. Did you not represent to them the necessity for increasing largely the number of men to work those fire-escapes?—Yes, that will all be found in the reports which I have handed in to-day. I think it will be found very amply stated in those reports.

633. However no action was taken I suppose to increase the number of men at that time?—We took over some men with the fire-escapes.

634. Still very far short of the number you required to work them?—Yes.

635. The fire-escapes have been largely increased since you took them over, have they not?—The fire-escapes have been increased considerably since we took them over.

636. Can you tell us how many men you took over with the fire-escapes?—The records of the committee will tell that quite accurately. I should say we took over certainly upwards of 60 with them, but I cannot say accurately. The records of the committee will show that quite precisely.

637. As you require 130 now, that just about makes up the number of men that you are short of your first estimate, the difference between 60 and 130?—But we took in afterwards other men. I remember several batches of men that we took in more or less on account of the fire-escapes, which will all be found recorded accurately in the minute books of the committee. At the end of the year it appears that there was a net increase of 87.

638. The whole establishment was not complete at that time; it was in process of being organised, being gradually brought up to your original estimate, was it not?—Yes.

639. It was in process of formation at that time in point of fact?—Yes.

640. I may take it now as you have said before that looking at the work to be done with the fire-escapes, you have 84 men less available than you estimated for in your original estimate?—Yes.

641. And of course you now consider your original estimate to be inadequate for London?—Yes; I think it goes in the right direction, but I think it is not sufficient now.

642. Can you tell me the increase of fires since 1865; has it been in accordance with the increase of houses?—I think that the increase in fires is generally more rapid than the increase in houses.

643. Can you tell us whether the per-centages of fires have increased since 1865?—The fires in 1866 were 1,338, and the fires of last year were 1,529, but in the middle period between those two extremes they once attained the number of 1,946 in a year.

644. *Chairman.*] They have diminished of late, have they not?—They have diminished in the last two years.

645. Mr. *Ritchie.*] If two large fires were to occur at one time, do you think that with your present staff you would be able efficiently to grapple with them?—That is a question which is very difficult to answer. We always have been able to deal with everything that has arisen.

646. As well as you would desire to have dealt with it?—Certainly not as well as I should have desired to have dealt with it; but we have dealt with them in a way which has proved satisfactory. We are capable of making great efforts on those occasions.

647. Can you tell me how many men were employed at, say, for instance, the fire that took place at Peek, Frean's?—One hundred and twelve.

Captain *E. M. Shaw.*

1 May 1876.

648. Can you tell me how many were employed in the fire at the City Flour Mills?—There were 196 men employed there.

649. How many men did that leave available for all the rest of London?—Not very many; it happend during the morning, but we relieved some of the escape men early, and got them on.

650. How many men did it leave available for all the rest of London?—I think, without relieving the duties, there would have been about 20 or 30, but all the duties might have been relieved.

651. What do you mean by all the duties might have been relieved?—Taking the men away from the escapes and from the stations, and sending them on, and taking away the watch.

652. But that would very materially have imperilled the chances of reaching any other fires if they were to take place, if you take the men away from those stations and compel them to stop operations?—Yes, for a time it would do so.

653. Is not that very objectionable?—Yes, it is very objectionable, certainly; we do not want to do it; it is objectionable, but still we can do it.

654. Can you tell the Committee how many men you had engaged at the Pantechnicon fire?—One hundred and twenty.

655. How many men did that leave for the rest of London at the time that that took place?—It happened at an awkward time of the evening.

656. Fires do happen, I suppose, sometimes, at awkward times?—Before the duties went out in the evening there were 110 men available, but we had to send out 177 men to duties with fire-escapes and other duties, and therefore there was a difficulty.

657. How long were those men taken away from their work in those cases; how long were they engaged?—There are so many cases to deal with, that I could hardly answer it accurately.

658. How did you get men for the fire at the Pantechnicon?—At that fire there were 110 men left at home available in the various districts, and we had to send out 177 men that night on fixed duties, and we withdrew some of the men from the Pantechnicon as soon as it was safe to do so, and delayed some of the duties a little, and in that way did what was necessary, and accomplished what was required.

659. Supposing that the Pantechnicon fire and the City Flour Mills fire had occurred on the same night, that would have added to your difficulty, would it not?—Yes, it would have added to our difficulty, but I think we might have dealt with them both.

660. I take it that there are two ways of dealing with a fire; one way is to deal with it in a proper and effectual manner in order to stop the progress of the fire; and another way is to deal with it to a great extent to prevent its spreading to other property, but without much hope of being able to stop it so far as the property itself is concerned?—Yes, that is the case.

661. The men sometimes have, I suppose, to be taken away from one fire to another?—Yes, but not very often.

662. Some of the stations are very short-handed, are they not?—Yes.

663. How many men are there at the Bow Station?—There are five men at Bow.

664. How many of those men are engaged at night on duties?—One on station duty and two on escape duty.

665. That is three men out of the five who are not available at night?—Yes; three men out of the five that are not available at night except in the neighbourhood.

666. That leaves two?—Yes.

667. Are two sufficient to go out with an engine?—Yes; we do not complain if we have two men to go out with an engine; it is not properly sufficient, but we can do a great deal with two men.

668. I suppose one of those two men might have happened to be ill?—Yes, or on leave, and that sometimes makes a difficulty.

669. I think you stated before, that as a matter of fact your stations have sometimes to be entirely closed?—Yes, that has happened.

670. What has been the condition of the Holborn Station for some months past with reference to men?—Holborn has happened to have had a run of sickness.

671. How

671. How many men are there usually available there?—There are nine men attached to the station; three of those go out every night on escape duties and one every day, and one every night on station duty, and that, if there were no one on leave, would leave four men available for the work.

672. You say four on ordinary occasions are available for work, but as a matter of fact for a month or two, how many of those men have been available?—There has been an exceptional state of things at Holborn latterly through sickness, and not more than one or two have been available to send away.

673. Not more than one or two out of nine men have been available to send away to a fire?—Yes, but that has been an exceptional state of circumstances.

674. Are not all your stations acting under an exceptional state of things; are not they all liable, on account of the small number of men apportioned to each station, to place you in a difficulty at any moment by the men turning ill?—Yes; not exactly by every man turning ill, but if many men in a district are ill, if there is a large sick-list in any one district, of course it may be understood that there is great difficulty in that district during the time that those men are sick.

675. How long, owing to this sickness, have you only had two men available at Holborn?—It happens to be a good while. Some children had been sick there with an infectious disease, and it was not considered safe for the men to mix with the others.

676. For two months?—I am afraid so, or something like that.

677. For the last two months you have only had one or two men available at Holborn?—That is, one or two men belonging to the station, but we have been able to supplement those from other stations according as the men could be spared.

678. When men are sick, have you men to send in their place?—No, it is a very unusual thing to have a large sick-list in every district at the same time; and if one district has a large sick-list, another district which has a small one, or none at all, can always lend a few men, and the same thing happens with stations.

679. And you reduce the available number of men in the district which you take them away from?—Yes, of course that does happen.

680. With regard to the officers, what position do the officers occupy at a fire. Do they direct the efforts of the men, or do they work along with the men?—The proper functions of the officers would, of course, be to direct the efforts of the men, but our officers make no complaint about having to lend a hand. They are just like the officers on board a ship, who are ready to put their hands to everything.

681. As a matter of fact, is it not the case that the officers do have to work just the same as the men?—Yes, I am afraid that is so.

682. Do not you think that that is a very bad state of things that the officers should have to work, and not that they should have to direct the energies of the firemen?—It is what may be called, perhaps, an unfortunate state of things, but it really is a thing that we do not very much complain of; we are sorry for it, but that is all; it does work.

683. Whether with reference to duties, or with reference to the extinguishing of fire, I may take it that you are met on every hand by difficulties on account of the small number of men that you have?—Yes, I am afraid that that is more or less the case.

684. Do not you think that the small number of men is dangerous to the property of London?—I think so long as their health can be preserved it has not proved dangerous hitherto, and we must take that into consideration. There is a prodigious energy in those men, which can be brought out of them at any time. They may always be relied on, and that is a very important element in answering such a question as you have asked me.

685. May I take it that you think that the number of men are sufficient?—I do not; I think it a pity to strain the energies of very willing men.

686. Is it an uncommon thing for men to be on duty 24 hours?—No, it is not an uncommon thing for men to be on duty for 24 hours.

687. Is it an uncommon thing for men to be on duty for 36 hours together?—That does not happen very often; it does happen.

688. Can you give the Committee the maximum period of continuous work, or one or two instances that have come under your notice of excessive duty?—Yes,

Captain *E. M. Shaw.*

1 May 1876.

Yes, the men have sent me a table of a few cases; I told them not to multiply them.

689. Will you favour the Committee with one or two instances?—There was a man at Brompton who was on duty for 42 successive hours; a man at Hammersmith was on duty 51 successive hours; a man at St. Pancras was on duty 42 successive hours; a man at Holloway was on duty 74 successive hours, and four other men at the same station, Holloway, have done 60 consecutive hours duty latterly; a man at Bishopsgate was on duty 55 successive hours, and a man at Shoreditch 43.

690. Was there one man at the Shoreditch Station on duty 98 hours out of 109 hours?—I have not got that case. A man at Blackheath was on duty 92 successive hours; a man at Sydenham was on duty 120 successive hours; another man at Sydenham 108 successive hours, and a man at Lewisham was on duty 64 successive hours. Those are all the excessive duties that I have allowed them to bring you, because there was no use in multiplying evidence on such a point.

691. Sir *Henry Peek.*] Are those comparatively recent?—Yes, they are all recent; that is why I have limited them.

692. Sir *James Hogg.*] Will you just say what the duty is that they are engaged upon; is it in station or out of station, or where?—If you will ask me about any particular one I can tell; these are all different.

693. Mr. *Ritchie.*] Take the case that you have named of the man who was on duty 120 hours at Sydenham?—That would be one of the heaviest, I imagine.

694. There is one at Holloway where there were five men, and one man you said was 74 consecutive hours on duty?—One man at Holloway was 74 consecutive hours, and the four other men were 60 hours; the officer says the duties there are from four to seven nights in succession, merely at nights, not consecutive hours; as to the case of 74 hours at Holloway, he says, "As regards the excessive duties, I have to state that in more than one case I have done 74 hours, and even more, without having my boots off my feet; there is one case this last month, when I was on duty from 8 p.m. of the 7th, until 7 a.m. of the 10th, without having the belt off" (the signal of duty on the station), "then doing work at the station, and afterwards going to the superintendents' station and the workshops in Waterloo-road and attending to chimney fires. It was 10 p.m. of the 10th before I had the opportunity of taking my boots off, which made 74 hours all together." This man adds, "I could also refer to other cases too numerous to mention, where a man does 36 and 48 hours right off."

695. Could you give the case at Sydenham?—The man at Sydenham says, "I had five nights' and two days' duty, including one night at a fire, and the rest at station and escape duties."

696. Sir *James Hogg.*] They lie down, do they not, in the stations?—Yes, and with the escapes, wherever it is possible they lie down.

697. Have they got a bed to lie on?—They have got a trestle.

698. Mr. *Ritchie.*] When they are on duty they are liable, are they not, to be called at a moment's notice?—Yes, and in the stations they have to attend to the telegraph calls during the night.

699. So that any rest that they can take must naturally be of the most broken description?—Yes, it is.

700. Supposing a man to be engaged on station or escape duty, or both alternately for three or four nights in succession, when his turn comes round for a night in bed, if he is called out to a fire and loses his night in bed, is it made up to him, or does he have to recommence his round of duty just as if he had been in bed that night?—The rule is that he has to take his turn at his duties again, but there are cases in which we are able to relieve him. Every possible effort is made to relieve him.

701. But, as a rule, if a man is called out on duty on a night on which he is due in his bed, and is thereby deprived of that night's rest, he does not have it made up to him the next night?—No, it is impossible to do that.

702. In fact, he goes on the next day as if he had been in bed all night?—Yes.

703. That accounts, I suppose, for the large number of hours that the men have to work?—Yes, certainly it does.

704. When

704. When men come back from fire-escape duty which has kept them out all night, are they put to any duty at the station at once, to cleanse the engines, gearing, and so on?—Yes, in many cases. Everyone has got to help at everything, that is a fact.

705. Do you think that men after they have been out with an escape all night are very fit to go out to a fire when they come in the morning?—I should rather not send them out, but it is impossible to avoid sending them out.

706. Would you think it a good or a bad thing to have the escape duties entirely separate from the other duties; to have a certain number of men whose duty it was to attend to the fire-escapes?—I think that that would be very injurious to the brigade.

707. You would not approve of it?—No, I think it would be a very great weakening of the brigade.

708. My reason for asking that question was that in the last Committee which sat on the subject, there were some advocates of a plan of that kind; you were not an advocate for it; but I saw some evidence which went in that direction, and therefore I would ask your opinion upon it now?—I cannot imagine any state of things which would make it advisable.

709. It is your deliberate opinion, I suppose, that the men are very much overworked?—Yes, putting it in that way, I think the men are very much overworked, but I do not say that the men complain of overwork, which is quite a different point.

710. Have they never complained of it?—They speak of it, but it is not complaining; as a matter of fact the men mention it, they put it forward as a fact. But I wish to mark the difference, I do not at all dispute the fact, but what I wish to say, and to have understood by the Committee, is that when the men are overworked, as we acknowledge they are sometimes, that is not the time that they complain about being overworked.

711. They perform whatever work they have to do willingly?—Yes, they always do it to the best of their ability. There is an amount of energy which one can always count upon for that.

712. That is one reason, I suppose, why you think any just complaint that they have should be remedied, if possible?—Certainly, I think so.

713. Have you ever represented to the Board the excessive labour which this amount of work entails upon the men?—That will all be found in the reports which have been presented to-day.

714. Do many men break down in health in consequence of the severe and continuous work?—Yes, a good many do.

715. I would refer to a petition dated February 1874, to the Metropolitan Board of Works from the men in which amongst other things they say, "We beg further most respectfully to submit to the consideration of your Honourable Board the fact that the duties of the brigade are exceedingly laborious and injurious to health. The men for this service are selected almost entirely for the soundness of their constitutions, and are, before being admitted to those ranks, subjected to a most strict preliminary medical examination; but notwithstanding this a great number break down, and in every case have left the service shattered in health and altogether incapable of following any employment in order to enable them to support themselves and their families, and as under the present regulations they are totally unprovided for they soon become reduced to a state of helpless destitution;" is that, so far as you are aware, a true statement of the case of the men?—Yes, I believe it is; I think it is put very strongly there.

716. In addition to the amount of excessive work which the men have to perform, they have other reasons for complaining, have they not; I mean now specially with reference to the fact of a superannuation fund not having been agreed upon and established before this?—Yes.

717. That is a very fruitful source of complaint on their part, is it not?—Yes, that has been a very troublesome question for a long time past.

718. Before going to the superannuation fund, I should like to ask you one or two questions with reference to the evidence which you gave the other day as to the pay of the men; I think it was made to appear that their pay had been very greatly augmented since they had been taken over by the Board; what was the old pay of a first-class man under the London Fire Brigade?—It was 3 *s.* 6 *d.* a day.

Captain *E. M. Shaw.*

1 May 1876.

719. But, in addition to that, were there not fire rewards?—There were fire rewards.

720. What did they average?—About 9*s.* 6*d.* a week.

721. So that the pay of a first-class man under the London Fire Brigade, taking into account his fire rewards, came to about 5*s.* a day?—Yes, about 1*l.* 14*s.* a week.

722. And the present pay of a first class man is 5*s.* a day, is it not?—Yes.

723. So that that is exactly the same?—Yes.

724. Then there has been no rise in point of fact?—There has been no rise there.

725. They do not get any fire rewards now, do they?—They do not get any fire rewards now.

726. You stated that the pay of a second-class man was 3*s.*?—Yes.

727. His fire rewards were also 9*s.* 6*d.* a week?—Yes.

728. That would give him 4*s.* 6*d.* a day?—Yes.

729. What does he get now?—He gets 4*s.* 6*d.* a day.

730. Without fire rewards?—Yes.

731. So that there is no increase there?—No, there is no increase there.

732. The only difference being that there have been two other classes lower than those created; a third class, which gets 4*s.*, and a fourth class, which gets 3*s.* 6*d.*?—The difference in that point is that when a man formerly joined he at once entered into the class in which he received 1*l.* 10*s.* 6*d.* a week. Now it takes a man longer to get into that class, but I do not think that there is any complaint about the pay all the same.

733. I do not know that there is; it is simply in order to make it clear that there was not that rise which was apparent on looking over your answers?—There certainly has not been a rise. On the contrary, there has been a very great diminution for those first joining; but when they attain those upper ranks they do as well as they did before.

734. The first and second class men get the same as they did before; but in the case of the men who enter the brigade it takes some considerable time before they reach even the second class?—Yes.

735. Whereas previously they entered in the second class?—Yes.

736. So that, so far as wages are concerned, it is against the men?—Yes; decidedly against those first joining, but it comes right in the second class and in the first class.

737. Then it comes to the same as it did in 1865?—Yes.

738. Did a system of superannuation exist under the old London Fire Brigade?—No.

739. Was there no scheme?—No scheme.

740. But superannuations were granted in point of fact, or were tried, were they not?—Every case was considered and decided on its merits. The principle was exactly the same as it is now. The committee of the late London fire-engine establishment was exceedingly liberal in their dealings with the men.

741. There was no complaint at that time as to any case of superannuation?—No, there was no complaint; it was a private establishment.

742. Were men who were disabled pensioned under the old London Fire Brigade?—They were always taken care of in one form or other.

743. If they were killed their widows and families, I suppose, were provided for?—Yes.

744. Was it a condition of the transfer of the men to the Metropolitan Board that this should be continued?—I am afraid that that is a question which I can hardly answer. It was interpreted by the men to be a condition, and I personally understand it as a condition, but I do not think that our Board acknowledges it as a condition.

745. *Chairman.*] What there is about superannuation is contained in the 8th section of the Act?—Yes.

746. Mr. *Ritchie.*] The Board took power under the Act to do that, did they not?—The Board have power under the Act to do it.

747. Was there no resolution passed at the Board of Works that this should be done at the time of the transfer?—That I am unable to say. I cannot answer for the resolutions of the Board. There was something of the sort, I believe.

There

There was undoubtedly an understanding upon the subject, but I do not know that it ever took the form of a binding resolution.

748. Was this the resolution of the 24th of November 1865 that the Superannuation Fund "should be continued, the men of all classes, however, pay into the fund at the rate of 6 *d.* per week. In the case of a man being killed in the discharge of his duty your committee desire to express their unanimous opinion that his widow should be provided for by an annuity which should continue during the pleasure of the Board;" no definite scheme, I understand from you has yet been settled?—No definite scheme has yet been settled.

749. The only thing that the men have to look to, if disabled from accident or sickness, is whatever the Board may consider it right to do for them without their having any special claim?—Yes.

750. How many men have been actually pensioned during the time that the Metropolitan Board has had the brigade under their control?—This is one of those many questions which I think would be better answered out of the committee's minutes than by me, but I will endeavour to answer it as far as I can. We have had three men discharged medically unfit, and four superannuated.

751. That is to say, four have a pension?—Yes, or some provision made for them; but all that will be found in the books of the committee.

752. I have a return here, and I should like to ask you with regard to one or two of the men who were treated by the Board in that way; I find here a man, Charles Radford, who was 17 years in the brigade; what position did he occupy in the brigade?—He was a first-class engineer.

753. How long was he in the force?—Seventeen years.

754. Did he break down?—Yes, he broke down.

755. From the nature of his work, I suppose?—Yes, he broke down from the nature of his work, I presume.

756. And what provision did the Board make for him?—They gave him 16 *s.* a week.

757. In that case was there any report from the medical officer as to the probability of his continuance to exist, that is to say, how long he would live?—No, not exactly that. He was known to be in a very bad way.

758. Is it not a fact that the medical officer stated that he could not live 12 months?—I do not know that he ever named a time, but he said, I think, something of that sort.

759. As a matter of fact, how long did he live?—He died on the 14th of December 1873. He lived about six or seven months.

760. Did the men of the brigade make any representation to the Board about the small amount of the annuity which was given to Radford?—Yes, they did.

761. They felt alarmed, I suppose, at seeing the manner in which the Board proposed to treat them?—They made an appeal to the Board in July 1873, which I think will be found in the committee minutes.

762. Had this man Radford any family?—Yes, he had a family.

763. Did the men represent to the Board that it was a case in which there was great destitution at home?—Yes.

764. Of course in a case of that kind, consumption, it is naturally to be supposed, I presume, that there were many little things, medicines and delicacies required, which he was quite unable to obtain with that 16 *s.* a week.—Yes, I believe he was very poor.

765. And the men represented it to the Board. What reply did the Board make to it within your knowledge?—I think the Board replied that they were not prepared to re-consider the case, but their answer will be better found in the minutes of the committee.

766. As a matter of fact, although it was represented to the Board that this man Radford had been 17 years in the employ, had broken down in consequence of the work he had had, and that he would not really live six months, and was in a state of destitution, the Board declined to increase the allowance?—I am not quite sure that it was put in that way to the Board, but his case was represented in some way to the Board, which will be found in the committee minutes.

767. Can you tell me if this man Radford had occupied an analogous position in the metropolitan police, what his position would have been there?—I can hardly tell that; but I understood from the men that he would have had a much larger pension.

Captain *E. M. Shaw.*

1 May 1876.

768. Do you know what rank he would have occupied?—I presume that of chief inspector. He was rather reduced in position before he left the brigade. When he first showed signs of weakness I had to remove him from a very important position which he occupied, equivalent to that of chief inspector, and I placed him at Holloway, where the duties were very much lighter; and although he held the same rank in the brigade, there is a very great difference between being chief officer in a superintendent's station, and merely being chief officer of an ordinary station.

769. But was he removed from that higher office from any fault of his own?—Not at all; simply from weakness, and in the hope that his life might be saved.

770. He was removed because of illness, you say?—Yes; the doctor informed me privately that the man was ailing, and I determined to make all necessary efforts to save the man's life, and so I removed him to a quieter place.

771. And was this illness caused by his work?—I presume altogether by his work. When he was first with me he was a very strong man, and a very valuable officer.

772. What was his pay?—£. 2. 9 *s.* a week, and his rooms.

773. Is there another case of a man, Stephen Martin, who was pensioned on 15 *s.* a week; was he discharged through ill-health?—Yes, he was too weak for the service anywhere.

774. After 30 years' service?—Yes.

775. And he received 15 *s.* a week?—Yes.

776. He is still alive I presume?—Yes. He had never been anything but an ordinary fireman; he had never become an officer.

777. I have a return here, and I only find in that return two pensions for the whole of the time between 1866 and 1874; I suppose that is correct?—I think it may be added to now.

778. But taking the years between 1866 and 1874, this is supposed to be a complete return, is it not?—Yes, I think that it is correct for that time, but not for the present time. But precise answers to those questions will be given from the committee's minute books.

779. I find here a case of John Gibbs, who is discharged through ill-health, and who afterwards died of consumption, after having been three year's in the service, and 10 *l.* was the whole of the sum; that was paid in a lump sum?—Yes, 10 *l.* was the amount given to him by this return.

780. I find also a man, John Hill, who was discharged through ill-health caused by his occupation, and the surgeon remarks, "I greatly regret to say that a more promising young man never joined the brigade"; he was discharged in consumption, and received four guineas?—Yes, one month's pay.

781. He had been a very short time in the service, had he not?—Only ten months in the service.

782. But his disease was caused by his occupation, according to the doctor's return?—It is to be presumed so.

783. Did the doctor make that return?—The doctor did make that return.

784. George Ray is the next name; he had been two years and eight months in the service when he had to have his leg amputated?—Yes.

785. Is that on account of injuries received at a fire?—I think, as far as I remember, he was assisting a coachman with a horse, and fell off the horse.

786. And his leg had to be amputated, and he received 10 *l.*?—He received 10 *l.*

787. William Henry Dayman; he was discharged; he was six years and four months in the service, and was discharged, and received an allowance?—Yes.

788. He died, did he not?—Yes.

789. He received 20 *l.*?—Yes; several of those men asked about are dead since.

790. I will not go further into these questions, because I understand that you are going to produce a return to the Committee of all the cases that have been treated by the Board?—The committee can produce these; the books of the committee will show them with perfect accuracy.

791. Do you think that this uncertain and unsatisfactory state of the superannuation and pension fund impairs somewhat the efficiency of the brigade?—Yes, it does; it puts us to a very great amount of extra labour.

792. Have

792. Have the men continued to subscribe to the superannuation fund which existed at the time that the brigade was taken over?—Yes.

793. How much a week?—Sixpence a week, each man.

794. That was the amount agreed upon?—Yes; that is not the name of the fund however.

795. I was going to ask you that, do you know why the name was changed from that of superannuation fund to savings fund?—I have no idea.

796. It existed as superannuation fund under the London Fire Brigade; it was handed over as superannuation fund at the time of the transfer, and it has since been changed to that of savings fund?—That is so; but I think only the name has been changed.

797. You do not know why the name was changed?—I have no idea why the name was changed; but I think there was a reason.

798. You do not know the reason?—No, I never heard the reason.

799. When was the first scheme of superannuation submitted to the men by the Board?—I think in February of last year.

800. How many years was this after the taking over of the brigade; was not January of 1875 the first scheme?—No, February 1874.

801. That was the one submitted by the men to the Board, was it not?—Yes.

802. I am speaking now of the one submitted by the Board to the men?—That was the one of 22nd February 1875; that is my date for that.

803. That was one which was submitted by the Board after several requests and complaints by the men?—Yes.

804. Did this scheme provide for the men themselves finding the whole of the superannuation fund out of this so-called savings fund, without any contribution at all from the Board?—It was interpreted by them to do so.

805. Did it not, as a matter of fact. Was there any other possible interpretation?—I believe not. I am not sure, but I think the Board had some other interpretation for that.

806. For the scheme of 1875, do you mean?—I think so; the men interpreted it as making up the fund entirely from their money.

807. This is the last clause (I am reading now from the superannuation scheme for the fire brigade proposed by Mr. E. J. Thompson): "The Committee will see that the fund to be created will be formed by subscriptions from the men of the brigade, together with interest arising from the firemen's savings fund, and though the amounts set out as receipts may not equal the merits of the pensioners, I expect the income will be sufficient to ensure pensions of the amounts named"?—Yes.

808. So that there can be no doubt about this scheme; this scheme was based solely upon the contributions of the men themselves, without any contributions from the Board. Did the men unanimously reject that scheme?—They did.

809. Has any further scheme been submitted to the men?—Yes, another scheme has been lately submitted to the men.

810. Has that also been rejected by the men?—That also has been rejected by the men.

811. Have you got the last scheme?—Yes, I have it here.

812. Was that only to come into operation on the 1st of May, except for those who were prepared to pay up back subscriptions from the time they entered the brigade?—It was interpreted by some of the men to mean that.

813. Is this one of the clauses of the scheme: "Every man's service shall for the purposes of this scheme, date from the day of the scheme coming into operation, but he may become at once entitled to have his service reckoned from the time he joined the brigade, upon payment, as follows, viz.: if he joined since the 5th of July 1865, of a sum equal to the amount standing to his credit in the firemen's savings fund, but if he joined before that date, of a sum equal to the amount put to his credit since 1865, together with 6 *d.* for every week of service prior to the 5th of July 1865"?—Yes, that was one of the clauses.

814. Does not that clause seem to interpret the scheme in the way the men suppose?—The men have interpreted it in that light; but I understand that

Captain *E. M. Shaw.*

1 May 1876.

the Board say that it may be read in another light; and it is quite evident that it may.

815. How long is it since the Board looked at it in that light?—That I cannot say.

816. However, the men looking at it from that point of view, did they give any reasons for rejecting it?—Yes. They have not given reasons to the Board for rejecting it, I may mention; they have had no interview whatever with the Board; but I called on them for their reasons in consequence of this inquiry, and I have seen them since the last day on which I was examined here. I have read that clause to them, and have read their clause which they propose to substitute, and their reasons are these. The men say that this condition is so worded as to enable the Board to call on certain members of the brigade to pay up large sums of money, if the Board wish to interpret it in that way. They object altogether to the vague wording, and offer instead the following: "Every man's service shall, for the purposes of this scheme, date from his original appointment, such service to include the late London fire engine establishment, parish-engine keepers, and the Royal Society for the Protection of Life from fire, upon payment from each man of an amount equal to 6*d.* for every week of his service."

817. And you think that that clause should be substituted for that one that I read just now?—Yes.

818. Mr. *Onslow.*] That is retrospective?—Yes, to a certain extent; but the money exists.

819. Sir *James Hogg.*] Is it not the case that the Board engaged to contribute 500*l.* a year to the firemen's fund also?—I understand so.

820. Mr. *Ritchie.*] What is the average number of years after which a man may be said to be unfit for duty in the fire brigade?—I do not think that point is exactly known. We have had men with very long service who could hardly be said to be altogether unfit.

821. But should not that determine the period at which the maximum pension should be granted?—Yes, I think it should, and I think a time might quite well be named for that; in fact, the Board has named a time.

822. What time have they named?—The Board has named 35 complete years of service. The men think that 30 years of service is ample.

823. I do not know whether you could express an opinion as to the one or the other?—I think that 30 years is quite as much as they ought to be expected to serve.

824. You think that the maximum pension should be reached in 30 years?—Yes. But again the Board has put in a proviso to which the men appear to object strongly, and that is that the man should, when claiming his pension at the end of that time, have attained the age of 60 years; and, as I say, the men appear to object very strongly to that; their reason, as given to me, being that if two men enter the service the same day, one at 18 and the other at 25 years of age, after 35 years of service the man who has entered at 25 years of age can go forward and claim his discharge and his superannuation, whereas the other man, who may be assumed to be a better man and to have done more service, cannot claim his discharge yet for seven years.

825. Do not you think that a very reasonable objection?—Yes; I think it a very important objection from the men's point of view.

826. And a reasonable one?—And a reasonable one.

827. Then in any superannuation scheme you would have the same length of service for the maximum pension, whatever the age of the man was?—Yes; I think the item as to age should be omitted.

828. And you think that that length of service should be 30 years?—I think that 30 years is ample.

829. Then if those two particular points were settled to the men's satisfaction, do you think that that last scheme would be acceptable to the men?—I am not very well able to explain this scheme, either the Board's scheme or that of the men. I have not been connected with the movement in any way or shape whatever, except as a medium of communication, and keeping the men under a certain control in their agitation on the subject, but it appears that they have a great deal to say on every one of those clauses. Some of them they agree to; others they object to altogether. I have had an interview with the men on the subject, since the last day I was here, in order to put myself in a position to answer

answer these questions, which I could not have done at my last examination; and I can go through them now, clause by clause, if the Committee desire it.

830. *Chairman.*] This evidence relates to what I understand to be a grievance, and a statement by the men with regard to the scheme of superannuation which has been proposed; are any of the men prepared to come here to give evidence themselves with regard to this statement on their part?—Yes; any number of the men are prepared to come; and I have selected some names which, if the Committee please, can be taken into consideration.

831. You propose to place in the chair men who would represent the feelings of the force in regard to this superannuation question, and their views of the scheme that has been suggested by the Board?—Well, I am exceedingly unwilling to make any recommendation which would bring forward a man in a very humble position to fight the battle of a great number of men before this Committee. My feeling would rather be that under the circumstances the Committee should take from me now, as well as I can give them to them, such reasons as have been represented to me on the part of the men. After my evidence on the point has been completed, I should propose to send the men a copy of the evidence which has been given, and to leave it to them to say whether I have included all that they wished to say, and if I have not done so, then to place some of them in the witness-box before this Committee.

832. A very parallel case has been under examination recently, and that is the superannuation with regard to the police force generally throughout the country; would it not be for the advantage of the Committee that they should obtain directly from the men a statement of any grievance that they may feel with regard to the superannuation question?—Yes; I think from that point of view it would be a decided advantage for the Committee here to see the class of men with whom they have to deal. All I wanted to say was that these men will come forward in fear and trembling, lest they should fail to represent adequately the great grievances under which they believe themselves to suffer. That is the only point I wish to represent. They are exceedingly unwilling to come forward in any way which may be interpreted as appearing to act in a manner hostile to the Board under which they serve. That is really the feeling which exists among them. At the same time there are large numbers of them who are perfectly prepared to come forward and fight the battle to the best of their ability.

833. I would rather put it that it is not a battle to be fought, but a statement by the men of what they think is a fair grievance, considering the altered circumstances of the labour question, and the amount of exertion which is required from them as men. As I understand you to say, you think yourself that it would be advisable that you should state your opinions with regard to what you believe the men wish; and that then, if the Committee wish it, the men should be called in support of that?—Yes, I think that under the circumstance, and dealing with a force which is kept under very strict discipline, it will be the safest course for all concerned. My view is that it places a man in a humble position in life in a very invidious position to bring him here to give evidence on a matter which, however this Committee may view it, is to him simply a battle for life and death, for money. And whoever comes up here would certainly have to represent the views of a large number of other men.

The *Chairman* stated that the Committee wished the Committee-room to be cleared.

Witness.] Before you clear the room will you allow me to say that what I have said has not been from any desire to keep back the men from coming here. On the contrary, I shall be really proud to produce men of every rank we have, and I will produce such men as we have no reason to be ashamed of, and men who can really give proper and strict evidence about it. But I think it will place them in a very invidious position if they are brought here. I should like them to come, but not many, perhaps a few of the upper ranks.

834. Sir *William Fraser.*] When you use the term "fighting a battle," surely you must have many men in the brigade who would feel that they are simply speaking the truth, and who would have no strong feeling *pro* or *con*, whose

Captain *E. M. Shaw.*

1 May 1876.

position would enable them to give unprejudiced evidence?—That is my fear. The men are now in a very disturbed condition, as the Chairman is quite well aware, and I myself would rather see very few of them brought here. Still at the same time, if this Committee wish it, I can send witnesses up to any extent they desire.

The Committee-room was cleared.

After a short time the public were re-admitted.

Chairman (to the *Witness*).] The Committee wish you to continue your representation of what the men have stated to you with regard to what the Committee suppose is a grievance which the men have on the subject of the fire brigade, and they would suggest that afterwards certain representative men should be put into the chair, if the Committee wish, in order to confirm any of those points, or to state their views with regard to any other point.

835-6. Mr. *Ritchie.*] I will just ask you one question. We quite understand that what you are going to tell us about this scheme you have been empowered by the men to say as an expression of their opinion?—Yes, in the way that I shall put it before this Committee. There is really very little power entrusted to me in the matter; but I think that I can explain their views in a way which will be satisfactory to them.

837. Will you do it in your own language?—I may state that I have had a conversation with them for the purpose. I can go through the scheme clause by clause.

[*The Witness handed in the following Paper :—*]

METROPOLITAN BOARD OF WORKS.

Scheme of Superannuation for the Metropolitan Fire Brigade.

(The Scheme will, pursuant to the Order of the Board of the 31st of March 1876, come into operation on the 1st of May 1876.)

Conditions.

1. No man, except as provided by Clause 9, shall be entitled to a pension or gratuity unless it be certified by the chief officer and one of the medical officers of the brigade that he is incapacitated by age or infirmity (such infirmity not being caused by his own misconduct) for the proper discharge of his duties.

2. In calculating the amount of pension or gratuity, the regular pay of the rank to which the man belongs shall alone be taken into consideration, exclusive of all special pay and allowances.

3. The following shall be the deductions from the pay of the various ranks:—

Superintendents	- - - - - -	- -	3 per cent. of regular pay.
1st-class engineers	(pay, 7 *s.* a day)	- -	1 *s.* 5 *d.* a week.
2nd „ „	(„ 6 *s.* „)	- -	1 *s.* 3 *d.* „
1st „ firemen	(„ 5 *s.* „)	- -	1 *s.* „
2nd „ „	(„ 4 *s.* 6 *d.* „)	- -	11 *d.* „
3rd „ „	(„ 4 *s.* „)	- -	10 *d.* „
4th „ „	(„ 3 *s.* 6 *d.* „)	- -	9 *d.* „

4. Every man's service shall, for the purposes of this scheme, date from the day of the scheme coming into operation, but he may become at once entitled to have his service reckoned from the time he joined the brigade,* upon payment as follows, viz.:—If he joined since the 5th of July 1865, of a sum equal to the amount standing to his credit in the firemen's saving fund; but if he joined before that date, of a sum equal to the amount put to his credit since 1865, together with 6 *d.* for every week of service prior to the 5th of July 1865.

5. Subject to the above conditions, a man shall be entitled—

(*a.*) For a service of over 10 years, and less than 15 years, to a pension for life equal to one-sixtieth of his pay for every completed year of service.

(*b.*) For

* The Brigade here is to be understood as including the late London Fire Engine Establishment, and also the establishment of the Royal Society for the Protection of Life from Fire.

Captain *E. M. Shaw.*

1 May 1876.

(*b.*) For a service of 15 years, to a pension for life equal to 20-60ths of his pay, and 1-60th additional for every completed year up to 20.

(*c.*) For a service of 20 years, to a pension for life equal to 25-60ths of his pay, and 1½-60th additional for every completed year over 20; but 40-60ths shall be the maximum allowance.

(*d.*) For a service of less than 10 years, to a gratuity equivalent to one month's pay for each completed year of service.

6. The case of any man disabled by injuries received on duty shall be specially considered on its merits; but any pension granted to a man so disabled shall not be less than the pension that he would be entitled to receive under the ordinary certificate of age or infirmity referred to in condition No. 1.

7. In the event of a man losing his life in the discharge of his duty, his widow shall be provided for by an annuity to continue during the pleasure of the Board, in accordance with the general order made on the 24th of November 1865, each such case being considered on its merits.

8. Any man not incapacitated by age or infirmity who shall leave the force after 20 years' service, except for misconduct, shall have the amount which has been deducted from his pay repaid to him.

9. Any man not incapacitated as aforesaid who shall leave the force after 35 years' service, except for misconduct, shall, provided he be not less than 60 years of age, receive a pension of the same amount as that to which he would be entitled if he left under a certificate of age or infirmity as above provided.

The amount at credit of the Firemen's Savings Fund shall remain at the men's disposal as hitherto.

Spring Gardens, 31 March 1876.

TABLE showing the proportion of his Pay which a Member of the Fire Brigade would, under this Scheme, receive as Pension, if incapacitated, after various terms of Service.

After 10 years' service	-	-	10-60ths of his pay.
11	„	-	11 „
12	„	-	12 „
13	„	-	13 „
14	„	-	14 „
15	„	-	20 „
16	„	-	21 „
17	„	-	22 „
18	„	-	23 „
19	„	-	24 „
20	„	-	25 „
21	„	-	26⅔ „
22	„	-	28 „
23	„	-	29⅓ „
24	„	-	31 „
25	„	-	32½ „
26	„	-	34 „
27	„	-	35½ „
28	„	-	37 „
29	„	-	38½ „
30	„	-	40 „

Witness.] In the superannuation scheme represented to the men by the Metropolitan Board, which was to come into operation by this day, No. 1 condition is as follows: "No man, except as provided for under No. 9, shall be entitled to a pension or gratuity unless it be certified by the chief officer and one of the medical officers of the brigade that he is incapacitated by age or infirmity (such infirmity not being caused by his own misconduct) for the proper discharge of his duties." The men say that that entry of an exception, "except as provided for under No. 9," is not satisfactory to them. No. 9 requires a man to serve to the age of 60 years, and to have 35 complete years of service. The men think that 30 years' service is sufficient, and that there should be no proviso as to age. The men propose to substitute for that No. 1 the following: "No man shall be entitled to a pension or gratuity unless it be certified by the chief officer and one of the medical officers of the brigade that he is incapacitated

Captain *E. M. Shaw.*

1 May 1876.

by age or infirmity (such infirmity not being caused by his own misconduct) for the proper discharge of his duties."

838. What is your opinion with reference to that clause?—I think it will be very advisable to leave out the reference to No. 9 to which the men object so strongly.

839. Then you agree with the men in that first clause?—Yes, I do. In No. 2 the Metropolitan Board propose this: "In calculating the amount of pension or gratuity, the regular pay of the rank to which the man belongs shall alone be taken into consideration, exclusive of all special pay and allowances." With regard to that the men say, that in all calculations of their pay the Board has invariably added in the allowances, and made a point of doing so as a reason for the rate of pay being what it is. They consider, therefore, that it should be fairly estimated as part of their pay, and that their pensions should be calculated in the same way, and they refer to a *verbatim* report of the proceedings of the Board on the 29th of November 1872, which, I understand, was taken for them by a special shorthand writer who attended for the purpose. They propose, instead of No. 2, to substitute the following: "In calculating the amount of pension or gratuity, the regular pay and allowances of the rank to which the man belongs, exclusive of special pay, shall be taken into consideration."

840. I just want to ask you your opinion upon that alternative clause of the men?—I think from their point of view that is proper and reasonable.

841. And do you think their point of view the proper point of view?—I think that, as their allowances have been calculated as part of their pay, they certainly would have a claim to a retiring allowance on the same principle.

842. Now Clause 3?—Clause 3, as proposed by the Board, is: "The following shall be the deductions from the pay of the various ranks: Superintendents, 3 per cent. of regular pay; first-class engineers, pay 7 *s.* a day, 1 *s.* 5 *d.* a week deduction; second-class engineers, 6 *s.* a day, 1 *s.* 3 *d.* a week; first-class firemen, 5 *s.* a day, 1 *s.* a week; second-class firemen, 4 *s.* 6 *d.* a day, 11 *d.* a week; third-class firemen, 4 *s.* a day, 10 *d.* a week; fourth-class firemen, 3 *s.* 6 *d.* a day, 9 *d.* a week."

843. Mr. *Hankey.*] Are there seven days in the week or six?—Seven days. Now, on this clause the men say that the following are the utmost deductions that they could consent to in justice to their families: Superintendents, 2 per cent. of their pay; first-class engineers, 1 *s.* per week; second-class engineers, 10 *d.* per week; first-class firemen, 9 *d.* per week; second-class firemen, 8 *d.* per week; third-class firemen, 7 *d.* per week; and fourth-class firemen, 6 *d.* per week; and they say that they believe all ranks would agree to a contribution, not exceeding 2½ per cent. on their gross pay and allowances; the allowances to be taken on the calculation made by the Board, as shown in the report of those same proceedings to which I alluded to before.

844. Mr. *Ritchie.*] And do you think that 2½ per cent. would be a fair contribution?—For my own part I hardly understand how they are in a position to afford the 2½ per cent.; but I have it from my best advisers on that subject that the men would be prepared to go as far as 2½ per cent., and therefore it is my duty to say so here. I think it would be a large deduction from such men.

845. You think that it is too much?—I have it from them that they can afford it, and therefore I can hardly say that it is too much.

846. In your opinion, it is the maximum?—It is more than I should have ventured to propose on their behalf if I had not it directly from themselves, that they believe there would be a general consent to it.

847. Sir *James Hogg.*] Which is their proposition, these figures that you have given or 2½ per cent.?—What they had proposed, in the event of being invited to go up to the Board and explain these points, would have been what I read first. Since I have spoken to them they tell me they believe there would be no difficulty in getting the whole of the force to agree to this latter one.

848. Mr. *Ritchie.*] Do I rightly understand you that in all the negotiations that have taken place with the Board with regard to the superannuation money, the views of the men have never been invited by the Board?—The views of the men on this last scheme have never been invited. In the previous scheme I am not sure whether they were invited or not, but they have been represented. That scheme, which you have called Mr. Thompson's scheme, was the subject of a personal discussion between Mr. Thompson and the men themselves.

849. Now

Captain *E. M. Shaw.*

1 May 1876.

849. Now the 4th clause?—With regard to number 4 I have already spoken. Number 4, as proposed by the Board, is:—"Every man's service shall, for the purposes of this scheme, date from the day of the scheme coming into operation, but he may become at once entitled to have his service reckoned from the time he joined the brigade, upon payment, as follows, viz.: if he joined since the 5th of July 1865, of a sum equal to the amount standing to his credit in the firemen's savings fund, but if he joined before that date of a sum equal to the amount put to his credit since 1865, together with 6 *d.* for every week of service prior to the 5th of July 1865." With regard to this condition, the men say that the condition is so worded as to enable the Board to call on certain members of the brigade to pay up large sums of money if the Board wish to interpret it in that way. The men object altogether to the vague wording, and offer instead the following as No. 4:—"Every man's service shall, for the purposes of this scheme, date from his original appointment, such service to include the late London Fire-Engine Establishment, Parish Engine Keepers, and Royal Society for Protection of Life from Fire, upon payment from each man of an amount equal to 6 *d.* for every week of his service."

850. Do you think that that claim on behalf of the men who have charge of the parish engines is one which ought to be taken into account?—I do; I think it is as valid as any other claim.

851. Mr. *Hankey.*] Would it not be a varying one for every district of London; there is no uniform scale?—These men joined us, and were placed in certain ranks, and they have had a good long service now, and I think are fully entitled to whatever allowances are made to the men in their position.

852. Mr. *Clifton.*] How many are there of these men?—Very few indeed.

853. Mr. *Ritchie.*] What is your opinion on the men's proposal in substitution for clause 4; do you think it a reasonable one?—I think it the only one that can by any possibility be carried. I know the money does not exist for making payments beyond what they have offered.

854. But I understand the difference between the men and the Metropolitan Board on this clause is more apparent than real?—I understand now from individual members of the Board that it is altogether apparent, and not real; but certainly it is not so worded.

855. The interpretation which the Board put upon this clause is the interpretation which the men desire, only the men wish to have it in distinct language?—Yes, as far as I can understand now; but of course I cannot speak for the Board, or for members of the Board; but members of the Board have since told me that the reading which the men wished to have of that clause is the reading which properly belongs to it.

856. May I ask whether the interpretation which the men put upon it was not represented to the Board at the time that they first prepared this scheme?—I can hardly say that. I personally represented it to members, but that is a very different thing from its being properly represented to the Board.

857. Now number 5 in the scheme proposed by the Board?—"Subject to the above conditions a man shall be entitled: (*a.*) For a service of over 10 years, and less than 15 years, to a pension for life equal to one-sixtieth of his pay for every completed year of service. (*b.*) For a service of 15 years to a pension for life equal to twenty-sixtieths of his pay, and one-sixtieth additional for every completed year up to 20. (*c.*) For a service of 20 years to a pension for life equal to twenty-five sixtieths of his pay, and one-and-a-half sixtieth additional for every completed year over 20; but forty-sixtieths shall be the maximum allowance. (*d.*) For a service of less than 10 years to a gratuity equivalent to one month's pay for each completed year of service."

858. What do the men propose in place of that?—The men propose in place of number 5 these words: "Subject to the above conditions a man shall be entitled, for a service of over 10 years to a pension for life equal to one-fortieth of his pay for every completed year of service until he shall have completed 25 years, when he shall be entitled to receive the maximum amount of twenty-five fortieths. For a service of less than 10 years to a gratuity equivalent to one month's pay for each completed year of service." In the first place, for myself I say that there are considerable differences between the Board's scheme and the men's on this point. They give me to understand that as to this last section there is an opinion on the part of the men that the maximum here

Captain *E. M. Shaw.*

1 May 1876.

offered is satisfactory, but that the time required for a member of the brigade to qualify for the maximum is too long, and that the question of age should not be taken into account. But they finish by saying that as to these and all other details they will be quite satisfied with whatever is decided on for the police; and they understand that there is an investigation going on about the police on this very point.

859. Your own opinion is slightly in conflict with the men's opinion here; they go by the maximum of 25 years; and, I think, in a previous answer which you made to me, you said that your view is that 30 years is the right number?—Yes, and I think the men can be made to agree to 30 years' service. Then number 6, as the Board offers, it is this: "The case of any man disabled by injuries received on duty shall be specially considered on its merits; but any pension granted to a man so disabled shall not be less than the pension that he would be entitled to receive under the ordinary certificate of age or infirmity referred to in condition No. 1." Now the men are satisfied with that.

860. Sir *William Fraser.*] Might I ask whether the men are satisfied practically with the decision that has been come to on this?—No decisions have been arrived at yet.

861. Sir *Henry Peek.*] Do I rightly understand that clause beginning "the case of any man disabled by injuries received on duty shall be specially considered on its merits," to mean with the above gratuity?—No, not necessarily so.

862. Because otherwise it appears to me almost, "Thank you for nothing"?—That is the proposal of the Board itself, and the men say that they agree to it.

863. Mr. *Ritchie.*] Will you proceed with No. 7, as proposed by the Board?—No 7 says, "In the event of a man losing his life in the discharge of his duty, his widow shall be provided for by an annuity to continue during the pleasure of the Board, in accordance with the general order made on the 24th of November 1865, each such case being considered on its merits." With regard to that the men say that they think that children up to the age of 14 should also be provided for, and more especially in cases where there is no widow. They propose, therefore, to make that clause, No. 7, read, "In the event of a man losing his life in the discharge of his duty, his widow and children shall be provided for by an annuity, to continue during the pleasure of the Board, in accordance with the general order made on the 24th November 1865." That is only, in fact, the addition of the words "and children."

864. Each such case being considered on its merits?—Each such case being considered on its merits; but they have not added those words.

865. Did you say "widow and children" or "widow or children"?—"Widow and children;" children under the age of 14.

866. Sir *William Fraser.*] In the case of there being only the children, do they think that the children ought to have the same as "the widow and children" ought to have?—No, but sufficient for their support.

867. Mr. *Ritchie.*] What is your opinion on that proposition?—I think it very desirable that the children should be provided for, and not left to chance charity.

868. It does not state to what age?—The men have not put it in, but they say that they would be satisfied with "under 14," and I presume that would not be considered unreasonable. Then, No. 8, as proposed by the Board, is "Any man not incapacitated by age or infirmity who shall leave the force after 20 years' service, except for misconduct, shall have the amount which has been deducted from his pay repaid to him." On this point the men refuse to abandon their right to the savings, except in cases where they receive something better; but I think that if a satisfactory settlement of a pension scheme be made the abandonment of all future sums paid in might be agreed to by the men.

869. But why draw a distinction between the future and the past?—Because at present the men have these large sums of money to their credit, and in case of their leaving they would have nothing to fall back upon at all. I should myself propose that perhaps some arrangement might be made by which the men should receive at least some portion of their savings back in every case of leaving except when pensioned. It was proposed that they should get their money back on leaving the force after 20 years' service, but nothing at all if they leave before 20 years; and on that they have taken their stand.

870. What

870. What do the men propose for that?—They propose, "Any man not incapacitated by age or infirmity who shall leave the brigade without a pension or gratuity greater than the sum to his credit, shall have the amount which has been deducted from his pay repaid to him." On that I have already said that some arrangement might possibly be made by which he would have at least some money to go away with; and I think that an exceedingly important thing. I can offer abundant reasons for that if this Committee care to hear them, which I suppose they will not. The general idea is that it will enable an officer like myself to do his duty conscientiously, and not to keep a man any longer than he is really fit for the service; because in a force like ours, in which we have so very much personal communication with the men, there is a certain fraternal feeling which must come on, which is part of our strength, and must be acknowledged; and if a man misconduct himself after 19 years' service, and in case of his going away we know that he would not have a single shilling of his 20 *l.* or 25 *l.*, which he has paid into this fund; it would place a difficulty in the way of superior officers, and responsible officers of the brigade discharging such a man. They would distinctly then have two duties strongly placed before them, one to discharge the man as unfit for the service, and the other to retain him as an old servant who should be taken care of for another year, in order to entitle him to his pension. And I think it most desirable that some provision of that kind should be made in any scheme which is brought forward to enable a man to obtain at least some portion of his savings in case of leaving. I think that no man should go from the force without some money, sufficient to enable him to live while looking after a fresh employment.

871. Of course this is only money contributed by the men themselves?—This is only money contributed by the men themselves; it is only of that money that this clause speaks. Lastly, we come to No. 9, which has already been mentioned in connection with No. 1. No. 9, as proposed by the Board, is: "Any man not incapacitated as aforesaid, who shall leave the force after 35 years' service, except for misconduct, shall, provided he be not less than 60 years of age, receive a pension of the same amount as that to which he would be entitled if he left under a certificate of age or infirmity as above provided." The men consider that they should be entitled to a pension after 30 years' service without a certificate from the surgeon, and without attaining the age of 60 years; and they would propose in place of that clause this: "Any man not incapacitated as aforesaid, who shall leave the brigade after 30 years' service, shall receive a pension of the same amount as that to which he would be entitled if he left under a certificate of age or infirmity as above provided."

872. *Chairman.*] Do they leave out, "except for misconduct"?—Yes, they have left that out. Whether it was intentional or not I cannot say.

873. Mr. *Ritchie.*] It would not be a reasonable thing that a man who left for misconduct should receive the same pension as a man who had left in the ordinary course of things after blameless conduct?—No.

874. Therefore, if the men have left that out intentionally, you cannot agree with them in that?—No, I had not observed that that was omitted.

875. I think you have already said that, supposing that were not omitted, the men's proposition is a reasonable one in your opinion?—Yes, I think so.

876. Sir *Henry Peek.*] "The amount at credit of the firemen's savings fund shall remain at the men's disposal as hitherto;" you have offered no opinion on that sentence?—That is not one of the points. That is, as it were, a note at the end, and I can hardly say what it means, because it certainly does not agree with one or two of the other items, unless explained. I should myself suppose that it means that for men who do not choose to accept this scheme, the savings fund remains at their disposal as hitherto, which of course it was unnecessary to put in, because the money is theirs now; they cannot change its ownership without their consent. But I cannot explain that note. I have no doubt it will be explained, however.

877. *Chairman.*] Will you have some of the men present on the next occasion, so that if your evidence is finished in time the Committee may proceed to examine them?—Yes. If it will be pleasing to the Committee, I should propose to bring a man up of each rank we have; and I shall certainly ask the Committee,

Captain *E. M. Shaw.*

1 May 1876.

mittee, if they are satisfied with the evidence given by the seniors, to stretch a point, if it is not inconsistent with their views, and relieve the younger men from coming here to give evidence. They will be in the room, and can be called.

878. You said at our previous sitting that you thought the chief inspectors, or the chief superintendents, of the four districts might give evidence to the Committee, which would be valuable on the general question?—I think that one of the superintendents will be quite sufficient for the Committee. It will be all repetition if there are more.

879. You think that one would give the evidence of the working of the brigade sufficiently?—Yes, quite; almost everyone who comes up would be able to give that, even the youngest men; but I am very unwilling to see them going into the witness box.

Thursday, 4th May 1876.

MEMBERS PRESENT:

Mr. Clifton.	Mr. Locke.
Mr. Forsyth.	Sir Andrew Lusk.
Sir William Fraser.	Mr. M'Lagan.
Mr. Hankey.	Mr. Onslow.
Mr. Hardcastle.	Sir Henry Peek.
Mr. John Stewart Hardy.	Mr. Ritchie.
Mr. Hayter.	Sir Henry Selwin-Ibbetson.
Mr. Herbert.	Marquis of Tavistock.
Sir James Hogg.	Mr. Young.

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

Captain *Eyre Massey Shaw*, called in; and further Examined.

Captain *E. M. Shaw.*
4 May 1876.

880. *Chairman.*] I UNDERSTAND you to express a wish to correct some portions of the evidence you gave on the last occasion. Will you state to the Committee what questions you refer to?—I refer to Questions 824 and 859.

881. What alteration in No. 824 would you wish to place upon the Minutes?—It is rather upon the subject of the two answers being likely to cause confusion when read together. The men are of opinion that, for incapacity, the maximum of pension should be attained at 25 years, and that without incapacity it should be attained at 30 years.

882. Sir *Henry Peek.*] Do you mean incapacity of mind or body?—Either incapacity of body or mind.

883. *Chairman.*] That would be upon medical certificate?—Yes, upon medical certificate; and that, in the latter case, that is, at 30 years, that it should be irrespectively of either medical certificate or age.

884. That is, a claim as of right?—Yes, irrespectively of age. The Board make the time for incapacity 30 years, and without incapacity 35 years; and they add a proviso with reference to the age being 60 in the latter case.

885. Mr. *Ritchie.*] In order to understand the matter clearly, I understand the men think that they should reach their maximum in 25 years in any case; is not that it?—That with incapacity they should reach the maximum in 25 years. Suppose a man to become medically incapacitated for service after 25 years, he should be able to claim his pension at 25 years. The Board make it 30 years and 35 years respectively; the men make it 25 and 30. The Board add the question of the age, but the men wish it to be omitted altogether.

886. I do not see how you are to regulate the scale by which the amount is gradually to rise if you have two different bases upon which the maximum is reached; that is, 25 and 30 years; because it is obvious that if the maximum is not to be reached until the 30 years, the rise cannot be so rapid as if it were to be reached in 25 years?—This is the proposal of the Board itself in everything but the figures.

887. *Chairman.*] As I understand it, the scale would work out that the men, being recommended upon medical certificate as incapacitated for further service, would receive pensions according to the scale of the years that they had served up to 25 years?—Up to 25 years.

888. And that at 25 years they would be entitled on such medical certificate to the maximum amount of the pension?—Quite so; that is exactly the state of things.

889. But that if the men had served in the force for 30 years then they would be

Captain *E. M. Shaw.*

4 May 1876.

be entitled as a right, without being incapacitated, to the full maximum amount of pension?—Precisely.

890. Without the limit of 60 years of age, which is at present made a condition?—Precisely.

891. Mr. *Ritchie.*] Do I understand that between 25 and 30 years there would be no further rise of pension; the maximum would be reached at 25 years in any case, would it not?—Yes; as the Board have made the period 30 years the men have made it 25 years.

892. What I understand is that the maximum pension in any case would be reached at 25 years, but the men would not be at liberty to take advantage of that pension at 25 years unless they were incapable?—That is exactly the case. It is precisely the proposal of the Board, only substituting the figures 25 and 30 for the figures 30 and 35, and omitting the proviso with reference to age.

893. *Chairman.*] What is the other point which you wish to correct?—The other is in reply to Questions 872 to 875 inclusive, with regard to the words "except for misconduct." In my answers to those questions I stated that I did not agree with the men if the words were intentionally omitted. This was an accidental statement on my part. It is a question which we all thoroughly understand in the brigade, and which I believe is thoroughly understood in all other forces, but I did not at the moment see that those words applied in the way that now know that they do; in fact I knew it before I left the Committee-room, although at too late a time to give the evidence. The men say that a man after serving 25 years should be entitled to some consideration even in the case of misconduct. They consider that a man should not forfeit all right to a pension in such a case, more especially as the term "misconduct" in such a force as a fire brigade with very strict discipline, is capable of very wide interpretation, and might at any moment be used arbitrarily against them. They take a supposititous case of two men committing the same offence. One having served 11 years and the other 26. The punishment to the younger man would probably be a fine, or reduction, which would be comparatively trifling, and to the man of 26 years' service, perhaps dismissal without a pension, which would be utter ruin. They, therefore, think that some intermediate course might be adopted, and they particularly desire to say that they do not object to any punishment that may be inflicted for gross misconduct. My own opinion is, and always has been distinct and clear, that some special times should be named when pensions should become inalienable, and I would name the times at 20 years' service, 25 years' service, and 30 years' service. This goes somewhat beyond the men's views; but I am convinced that it would work satisfactorily to all concerned; to the men by giving them a certainty, and to the employers of the men by giving them the opportunity of going on employing them in special cases.

894. I called your attention to those words for the express purpose of finding out whether the men of your force were of the same opinion as has been brought to my notice in other forces; namely, that after a man is entitled to a pension, and has a right to claim it, if he continues longer in the service, he should not upon some misconduct, arising possibly from a misapprehension, lose what he might have taken away with him if he had chosen at that time, when the time had expired at which he could have claimed the pension?—Precisely; I quite understand the point.

895. What the men say, as I understand it, is: If I, on completing whatever number of years it is, 25 or 30 years, am entitled to go away, then, being a good-conduct man with a pension of a certain amount, and I stay in the interests of the service two or three years beyond, and accidentally perhaps get reported for misconduct subsequent to the 30 years or the first period, I should be entitled, upon leaving the service, to what I might have claimed then as a right?—Yes, I think it most desirable that an arrangement to that effect should be made.

896. Mr. *Ritchie.*] But I understand you to go further than that?—I go further than the men in that, and I would commence at 20 years' service with some sort of pension, though, of course, I do not say that a man ought to get anything like the full pension; but I think he should get something at the end of 20 years, even in the event of misconduct.

897. *Chairman.*]

897. *Chairman.*] As I understand, 20 years would be the period of a man's service, when he would not be entitled to a pension unless he were reported medically unable to continue his duty?—Precisely.

898. Would you make the pension absolute, even if the man were a sound, able-bodied man, and had, after 20 years' service, misconducted himself?—Yes, I would.

899. Notwithstanding that the pension is not an inalienable pension at 20 years?—Yes, I would commence some kind of pension at 20 years.

900. Mr. *Ritchie.*] Would not that rather be an inducement for an unprincipled man who desired to leave the force after 20 years with the pension which he had then earned, to misconduct himself?—It might be put in that light; but looking at the market value of the men, and looking at the great advantage of giving these men a certainty in the service, I think the advantages are very much greater than the disadvantages; there are other disadvantages besides those which you have mentioned; but I do not think they are at all commensurate with the advantages to the men. I would do everything I could to make these men of 20 years' service continue in the force, and know that they are not running risks in continuing in the force.

901. Would you give a man, if he misconducted himself after having served 20 years, the full pension?—No; I have not proposed to do that. What I have said is, that there should be a time at which he should become entitled to some pension, say a half pension, or any proportion which might be agreed to.

902. You would suggest that a man should receive about half the pension in that case?—That a man should receive about half the pension in that case, perhaps more.

903. *Chairman.*] There is a broad distinction between the proposal to give a man a pension at a time when, if he were in the service, naturally he could not claim it, and giving him a fixed pension which he could have claimed by leaving when his time was completed, and which is only endangered by subsequent misconduct?—There is a broad distinction between those two cases.

904. The one stands upon the ground that he might have taken it away, and that he should not forfeit the amount which he could then have claimed, whereas in the other case he could have only claimed the pension by being sick and incapacitated?—There is a decided distinction between those cases.

905. Mr. *Onslow.*] I suppose you consider a man being asleep on duty one of the most serious crimes he could commit?—No; our men do sleep on duty. Our men on station duty lie down in their clothes, with the telegraph bell close to them.

906. The men are awoke by the telegraph?—The men are awoke by the telegraph, and in the fire-escape boxes they are awoke when they are asleep by the people calling them.

907. *Chairman.*] Is that all the evidence which you wish to give with regard to Question 872?—That is all I wish to correct.

908. Sir *James Hogg.*] Do you know that plan of pensions to be in vogue in the police, or in any other force?—I know that it has been considered in the police, or is now under consideration, but I am not aware of the affairs of the police so as to be able to give evidence respecting them. I know, however, that is a most important point with a body similar to the police, or similar to our force, to do anything that is possible to retain the services of old and experienced men.

909. You do not know of the case of any public body in which a man discharged for misconduct is entitled to a pension after 20 years' service?—I am not sure about that, but I am speaking as a practical man knowing the market value of these men, and I say that some steps ought to be taken, whether they exist or not in other forces, to adopt some scheme of that kind.

910. Will you give the Committee an idea of how you define the difference between misconduct and gross misconduct?—I do not think I could give an absolute definition of it, but in any case presented to me I could say what I considered to be gross misconduct. For instance, stealing, I should consider gross misconduct. I should consider the fact of a superior officer being drunk on duty a second time gross misconduct.

Captain *E. M. Shaw.*

4 May 1876.

911. Mr. *Ritchie.*] What would you say with regard to insubordination?—Insubordination I should call gross misconduct.

912. Mr. *Hardcastle.*] I did not quite understand one of your answers. Do you mean to say in the case of a fireman continuing in the service after 20 years that he is to have a pension as well as his pay?—Not at all, but in the event of a man who has served over 20 years, and under 25, assuming 25 years to be the period at which he could claim the maximum pension, and such a man being discharged for misconduct, I should give him some premium for his 20 years' service.

913. *Chairman.*] The presumption being that misconduct is not a common offence, and would not be likely to occur if a man had been in the force for 20 years?—Precisely.

914. Mr. *Ritchie.*] What would you do if a man had been guilty of gross misconduct?—I think in any case a man should have some credit for his 20 years' service; the men say that they ask for nothing in cases of gross misconduct, but I know the value of these skilled men a great deal better than my men do, and I am quite sure that anything that can be done for them to give them a certainty after a certain term of service will induce them to remain in the force.

915. *Chairman.*] Sir Henry Peak wishes me to ask you with regard to Question 876, whether you can explain that question?—I am sorry to say that I am quite unable to explain that note. I have no doubt it can be explained, but I have no idea of the meaning of it; that proposal is not from me in any way. I did not even know of it until it was shown me first by the men.

916. Mr. *Ritchie.*] I suppose you consider it highly desirable in the interests of the efficiency of the brigade that a satisfactory pension and superannuation fund should be established?—Yes, I do.

917. Has the want of this, and the amount of excessive work which the men have had to do, led to many resignations in the force?—Yes, I think so.

918. How many men have there left the brigade since it was taken over by the Metropolitan Board of Works?—Six hundred and forty.

919. In how many years is that?—Ten years and four months.

920. Do firemen require any amount of training, or a considerable amount of training?—Yes, they require a considerable amount of training.

921. I suppose it makes a great difference in the putting out of a fire whether the men are fully trained men or otherwise?—Certainly, it makes a very great difference.

922. Have you formed any estimate of the cost of training a man to be an efficient fireman?—I should say, taking it all round, that it would be about a 100 *l.* a man.

923. So that, from a pecuniary point of view, the cost of these men leaving after having been trained is a very serious matter?—Yes, in my opinion it is a very serious matter.

924. What length of time do you think it takes to make a man an efficient fireman?—I should say at the very least one year. There are men who are very intelligent, and begin to give help at six weeks and two months, and give more and more help as they go on, but I think that about a year is the earliest average time that you can take to render a man an efficient fireman, so that he is able to act upon his own responsibility in dealing with a fire.

925. I suppose that a great proportion of those 600 and odd men who have left the force have not been fully trained firemen?—A great many have not been fully trained firemen, but a good many also have. I think the very large majority have.

926. So that if they were all fully trained men, the loss of 640 men would seem to imply a loss of about 60,000 *l.*?—Yes, that is what I have always put it at.

927. I think you have stated before that you have difficulty in obtaining men to fill the ranks?—In a certain sense I have difficulty. I have a number of men coming but not as many as I have leaving, except just at the present moment, when I am getting a number of men, in consequence, I presume, of the sitting of this Committee.

928. You have more than once, have you not, been below your standard, in consequence of not being able to procure men?—We have often been below our standard.

929. I suppose

929. I suppose there was a very different state of things under the old London Fire Brigade?—Yes, we had a large number of applications then.

930. I suppose there was a great desire to get upon the establishment formerly?—Yes, apparently; the candidate's list was always full.

931. I have in my hands a speech made by Mr. Phillips, the Chairman of the Fire Brigade Committee, on the 29th of November 1872, to the Board, in which he says: "And there is another important fact which we should bear in mind, and that is that up to a recent time there were about a thousand men, sailors and others, upon the list wishing to be appointed firemen." That list, I believe, I am correct in saying has now entirely disappeared. Is it a fact that there was ever a list with a thousand men upon it wanting to be employed?—I believe there was, but I did not keep a list then. I believe that list was kept at the Board.

932. Is it true that that list has entirely disappeared?—It has.

933. And you attribute that list having disappeared to a want of attraction in the service?—Yes; soon after that I began to keep a list, and now I keep it altogether. I have at present no names upon it. I take the men as they come in, and appoint those men the same day, and get the sanction of the committee at the next meeting following.

934. Does not that imply that your normal position is that of being below your strength?—Yes, we have often been a few men below our strength.

935. And is that notwithstanding the fact that you have raised the age?—Yes, it is.

936. What were the ages between which you employed the men previously?—I was exceedingly desirous to employ men between the ages of 17 and 25, and I got a good many men of that age who proved exceedingly useful men, but then as the list got very short I was obliged to extend the age upwards, and I have got now to 30 years, and in some cases where we have been exceedingly short-handed I have been obliged to take men a little over 30 years of age.

937. And that you consider a very objectionable thing?—We are exceedingly unwilling to do it, and in such cases we only take men who look very young, although they are actually over the age of 30. We consider it a very important point that the men should look young.

938. Would you be glad to revert to your old limits of age?—Yes, I should be glad as soon as possible to do so, but it is not possible now.

939. If this superannuation scheme is fixed satisfactorily, and the number of men increased, you have very little doubt that you would be in a position to revert to your former age?—I have no doubt at all of it.

940. And you have no doubt that you would again have a list of applicants?—I have no doubt that we should very soon have a large list of applicants. I think the number of men I get now is much more than enough to fill up the force if we could only retain the services of those men who are going away continually.

941. Is it true that you have had to advertise for men?—Yes; we have done that for years.

942. You have four classes, I believe; would you suggest any re-arrangement of the classes?—Yes; but first of all before doing that I would suggest something somewhat different. I would suggest an increase of numbers before any re-arrangement; I do not think, in fact, that we could afford a re-arrangement at present.

943. With your present staff you would not advise any re-arrangement?—No, I do not think with the existing staff we could afford any re-arrangement.

944. But if your staff were increased, what re-arrangements of the classes would you suggest?—I would suggest that there be a limited time appointed beyond which a man should not be kept in any class of the ordinary firemen. For instance, I should say that a probationary class should be established for men under instruction; that after a limited time they should be passed into the fourth class, and if fit to be promoted at the end of two years, they should be moved into the third class; and at the end of two years again, if they were fit, they should be removed into the second, and at the end of two years again into the first class, always assuming that they were fit for promotion; so that any man entering and having passed the probationary class, would be quite sure that it only depended upon his own behaviour to get into the first class of firemen within such a limited period as six years.

Captain *E. M. Shaw.*

4 May 1876.

945. At present, the numbers in each class are limited, are they not?—At present, the numbers in each class are limited.

946. So that a man may remain in the fourth class for years?—A man might remain in the fourth class, or in any other class, for years; it depends entirely upon the removal of his seniors.

947. I suppose if a superannuation scheme were settled, that, even under existing circumstances, would make promotion more rapid, would it not?—Yes, I think it would.

948. *Chairman.*] I suppose you have considered this probationary scheme with the scheme of superannuation, because it might be possible otherwise that your men might eventually, if you had a fixed number of men, be all in the first two classes?—It is quite possible that the men might be all in the first class. I have carefully considered that, and I consider that if a man has passed through the probationary class satisfactorily, and has got himself into the regular classes of firemen, then his service should date from the moment when he was first appointed to the probationary class. That would be a matter of arrangements, which there would be no difficulty in dealing with, because I should propose that within the first three months, if a man should prove himself likely to be unfit for the service, he should be discharged then and there.

949. In order to keep up any proportion between your classes, it would be necessary, would it not, that your superannuation scheme should bear some relation to the number of years which the men might serve in the different classes, otherwise you might have all the men in one or two classes?—It is quite possible, as I have stated, that we might have all of them in the first class.

950. That would not be satisfactory, would it?—It would be exceedingly satisfactory. I think that the men should have the certainty that, with good behaviour and intelligence, they could get up into the first class in six years.

951. Would not that be practically identical with all our policemen being serjeants?—No, not so, because I stop it altogether at what I call the rank of first-class firemen. My scheme does not approach the rank of officers at all, the great difference being that a man who conducts himself well, and shows himself very intelligent in his business, but who may be a very poor scholar, may pass up through all those ranks and be a very useful and valuable servant to the institution, and yet be quite unfit to become an officer.

952. You would provide in your estimate for your firemen all being in first-class pay?—I do not think it would be necessary to provide for that, but of course it would be a contingency that should be thought of.

953. Mr. *Ritchie.*] How long would it take a man, going into the probationary class, to reach the first class?—If we made the probationary time three months, it would then take six years and three months for a man to reach the first class.

954. I suppose every year that a man is in the brigade increases to some extent his efficiency?—Certainly it does.

955. So that if they are all in the first class your brigade would be the more efficient?—Certainly; but I do not at all consider that there would be any difficulty in providing funds for these men, for after all it is but 5 *s.* a-day for these men that we call first-class men, and that is not a very enormous amount. We know that the force would certainly not consist of all first-class men.

956. Sir *Henry Peek.*] Might it not have the result of denuding you at one time of a large proportion of first-class men if they took their pensions at the earliest day they could get them?—No, I do not see that, because they would join the rank of first-class men at six years, when they would be entitled to no pension at all.

957. Mr. *Ritchie.*] You mentioned the officers just now. Have they any special ground of complaint with regard to their pay and position?—Yes, the officers have given me a note of what they consider the state of affairs with regard to them.

958. We will take the superintendents first. What is their particular grievance which they would like to put before the Committee?—The superintendents are now receiving 200 *l.* a-year pay, while the men who do according to their views, and according to mine, corresponding duties in the Metropolitan Police, receive from 300 *l.* to 400 *l.* a-year.

959. But do the superintendents in the police force receive their houses, coals, and gas free?—No, they do not.

960. And

960. And your superintendents do, do they not?—They do.

961. What do you calculate the value of that?—I think the Metropolitan Board of Works calculates it at 50 *l.* a-year, but I am not quite sure. I think that that would be a very fair calculation for it.

962. So that even if the Committee desired to put them upon the same footing as the superintendents of police, that would have to be allowed for, would it not?—No doubt; but that would be a question for consideration. These men have no desire to live in these houses. It is for the purpose of their business; they live there upon compulsion. A superintendent of police does not live anywhere upon compulsion, except that he is required to live within his district.

963. But a superintendent of police has to pay rent and other expenses?—Quite so, and allowance should be made for that of course.

964. You have three classes of engineers, have you not?—We have three classes of engineers.

965. With regard to a first-class engineer, what corresponding rank does an officer in the police bear to a first-class engineer?—A first-class engineer in charge of a superintendent's station with us is equal in rank and position, and, I think, in responsibilities, to a chief inspector of police.

966. You are referring to the engineer who assists the superintendent?—Yes, of whom we have only a very limited number. Each superintendent has one first-class engineer with him, who does a great deal of extra work, in addition to having charge of the station, and I have at head quarters two such men.

967. Is that six altogether?—That is six altogether.

968. So that what you were saying just now applies only to six men?—It applies only to six men. Then, with regard to the pay, a first-class engineer in such a position with us receives 2 *l.* 12 *s.* a week, and the corresponding officer in the police 3 *l.* 13 *s.*

969. But if you add on 1 *l.*, as being the value of his house and firing, and all that kind of thing, to the 2 *l.* 12 *s.*, that brings it up to the same pay as the police?—Yes, but the 1 *l.* would not apply to the men in this rank; it would apply to the superintendents.

970. But he has some allowance, I suppose?—Yes, the allowance has been calculated by the Board at 15 *s.* a week; I make it 13 *s.*

971. That makes a difference of 6 *s.* a week between him and a corresponding officer in the police force?—Yes.

972. Now, with regard to your ordinary first-class engineer?—An ordinary first-class engineer with us is equivalent to a first-class inspector of police in responsibilities, and duties, and so forth, and our man receives 2 *l.* 9 *s.* a week, and the police inspector receives 3 *l.* 2 *s.* 6 *d.*

973. Then there is the lodging?—Yes, there is the lodging.

974. That would make it about equal, would it not?—Yes.

975. It is understood that your calculations of pay are all based upon seven days' work and seven days' pay?—That is so.

976. Now with regard to your second-class engineer?—A second-class engineer with us is about equivalent to a second-class inspector of police. Our man receives 2 *l.* 2 *s.* a week, and a police inspector 2 *l.* 15 *s.* 6 *d.*

977. Then your officer is fully as well paid, taking into account his lodging, as the police inspector?—Yes, allowing the lodging at that rate, he may be considered to be about as well paid.

978. Has there been any increase in the pay of these officers since they were taken over by the Board?—There has.

979. To what extent; could you give it in the shape of a per-centage?—I can hardly give it by per-centage. As well as I remember, both the first and second class engineers received an advance of 1 *s.* per day.

980. Was that in the same proportion as the increase of pay given to the men?—Not nearly so much.

981. Is this a correct statement of the increase of the pay of the various ranks (*handing a Paper to the Witness*)?—It is quite correct.

[*The same was handed in, and was as follows:—*]

Captain *E. M. Shaw.*

4 May 1876.

TABLE showing the Original and Increased Rate of Wages with the Per-centages of the Increase.

Rank.	Original Rate of Wages.		Increase.		Present Rate of Wages.		Per-centage of Increase upon Original Rate of Wages.
	Per Day.	Per Annum.	Per Day.	Per Annum.	Per Day.	Per Annum.	
	s. d.	£. *s. d.*	*s. d.*	£. *s. d.*	*s. d.*	£. *s. d.*	
Superintendents - - -	10 –	182 10 –	–	17 10 –	–	200 – –	9
Engineer, 1st Class - -	6 –	109 10 –	1 –	18 5 –	7 –	127 15 –	16
„ 2nd „ - -	5 –	91 5 –	1 –	18 5 –	6 –	109 10 –	20
First Class Fireman - -	4 6	82 2 6	– 6	9 2 6	5 –	91 5 –	11
Second Class „ - -	4 –	73 – –	– 6	9 2 6	4 6	82 2 6	12
Third Class „ - -	3 6	63 17 6	– 6	9 2 6	4 –	73 – –	14
Fourth Class „ - -	3 –	54 15 –	– 6	9 2 6	3 6	63 17 6	16

982. Is there any deduction made from that pay of the men in consequence of sickness or holidays?—No, none whatever, except in cases of misconduct in sickness, as for instance, a man neglecting to inform his superior in proper time that he is ill, and turning out to be seriously ill, and perhaps not fit for duty for many months, he gets no pay at all during that time; he is suspended. But in all cases in which a man reports himself sick as soon as he knows he is likely to go on the sick list, he gets full pay.

983. Do you know whether those are similar to the arrangements made in the police?—I do not think that the police arrangements are nearly so liberal as ours upon that point. A man with us gets full pay in sickness, except in cases where his sickness is caused by his wilful misconduct, or the delay in curing him is caused by his wilful misconduct.

984. Have you a system of fining men in cases of wilful misconduct?—Yes, we have a system of fining men, and those fines are deducted from the pay.

985. Sir *James Hogg.*] Are those fines ordered by the Board, or are they portions of your own discipline in the force?—The suspending of men in cases of misconduct is entirely done within the force.

986. By yourself?—Yes.

987. Then, practically, the Board make no deductions?—Practically, the Board make no deductions, except for rents and fines.

988. Mr. *Hankey.*] Have the men any advantages in the shape of medical attendance in cases of accident or sickness free of cost to themselves?—They have medical attendance at all times free of cost to themselves. There are surgeons appointed by the Metropolitan Board of Works. There are four surgeons, one in charge of each district of the fire brigade; and every surgeon is supposed to live within his district and to give his personal attendance to every case within his district.

989. Mr. *Ritchie.*] May I ask whether, in your opinion, the requests of the officers to have their pay assimilated to that of the corresponding officers in the police are reasonable requests?—I think they are decidedly reasonable, but I do not think as I have given my evidence here to-day, that I have put the superintendents engineers, the first-class engineers, and the second-class engineers in the position which they wish to occupy with regard to pay. They claim some further pay now, and they wish to come forward here and show their title to it.

990. Mr. *Onslow.*] With regard to this system of fines, have you any definite system of fines, which you have laid down, by which the men know what they will be fined for any particular misconduct?—No, we have not.

991. It is perfectly optional with you, whatever the misconduct be, how much you will fine them?—Yes, within certain limits.

992. Do you think that the men are satisfied with that?—I presume they are satisfied with it. I think there can be no definite system of fines which would work at all justly. I think if two men commit the same offence, say, being late with an engine, the one having been 20 years in the service, and never having been late before, and the other having served two or three years, and been 20 times late, the senior should be let off altogether, and the other heavily fined and threatened with dismissal if he cannot get out in time for the engine.

993. You go into every case specifically, do you not?—Yes. I have often thought of working out a system, but I am of opinion that it would not work with a discipline like ours, which is very strict.

994. Sir *Henry Peek.*] Do you keep a record of the fines?—Yes, we keep a record of the fines, but the fines with us are not serious. The punishments are more in the way of reprimands and removal from stations, than in the shape of money, although, of course, the power exists to fine them in money.

995. Mr. *Ritchie.*] You provided, in the estimate of 1872, for an increase of about 535 men, did you not?—I did; it is in page 23 of the Appendix.

996. You provided for a total of 931 men?—Yes, I did.

997. What would have been the cost of that increase; the total cost of the brigade?—About 120,000*l.* a year.

998. That is about 50,000*l.* more than the brigade costs now?—Yes.

999. Do you still think that the brigade which you estimated for at that time could be established for that sum?—I think so, or for a very little more. There undoubtedly has been an increase of the prices of everything since the year 1872.

1000. Do you still consider such a large increase in the force as that necessary for the due protection of London?—Yes; I consider it true economy to have a force of that size.

1001. Do you think that if some such scheme were adopted, the number of serious fires would be materially reduced?—I do.

1002. In that estimate you have not calculated upon any assistance from the police?—I have not.

1003. With your present number of stations and engines, what increase of men do you consider necessary to work them properly?—I think, without increasing any of our duties at present, either our fixed watches, or our duties at fires, that by adding 50 per cent. to the existing force, we should be in a perfectly satisfactory condition with regard to the total number.

1004. That is about 200 more men?—Yes, about 200 more men. The precise calculation would be either 196 or 198, but say, roughly speaking, 200 more men.

1005. Two hundred more men with your existing engines and stations?—Yes; and without placing any more duties upon us. I can give the details of that which perhaps would be satisfactory to the Committee, to show the principle upon which I have gone. I have not at all roughed it to 50 per cent., but it happens to come to about that. I propose to have a chief officer's assistant, who would be additional. Two superintendents who would be additional. Six superintendents assistants, who would be additional. Twelve firemen added to the head-quarters station, when a head-quarters is established. Six men added to each superintendent's station; that would make 36; and three men added to each of the remaining 47 stations, making 141; which would make a total of 198; which happens to be 50 per cent. on the existing force.

1006. Mr. *Clifton.*] Is that inclusive of the floating stations?—Yes, it includes everything.

1007. Mr. *Ritchie.*] That would, of course, increase largely the number of available men always ready to send out with the engines?—It would.

1008. By how much would that increase the per-centage of available men at night; would it double or treble your available men at night?—It is very hard to answer that by per-centage, but I think it would put us in a position which would be perfectly satisfactory to us as well as to the public. It would vastly increase our resources undoubtedly.

Captain *E. M. Shaw.*

4 May 1876.

1009. And in consequence you would be able to deal with fires much more effectually than you can now?—Certainly.

1010. And there would not be the same danger if two or more large fires should occur at the same time as there is at present?—Certainly not.

1011. Sir *Henry Peek.*] If these 200 men were given to you do you think that they should be worked 365 days in the year as they are now?—That would be a matter of arrangement within the establishment. It would give the superior officers in the force the power we so much desire, namely, the power of granting leave to the men. At present we cannot grant to the men the leave which they might reasonably expect, and which we would willingly grant if we could.

1012. Mr. *Ritchie.*] I take it that the difference between your estimate of 1872 and this one is that the 1872 estimate would give, in your opinion, a perfect efficiency in dealing with the fires in the metropolis, whereas your second proposal, which you gave to the Committee just now, would enable you to use efficiently your existing appliances?—Precisely, that is my meaning.

1013. Have you formed any idea of the additional cost of these 198 men, and also of the re-arrangement of the classes which you suggest. If you had these 200 men would you be able to re-arrange the classes as you suggested a few minutes ago?—Yes, I should.

1014. Could you give the Committee the approximate additional cost in separate items of re-arranging the classes, and of having 200 more men?—My function in this matter is almost entirely limited to the wages account, and such accounts as that; and upon those points I think I can give particulars, but with reference to the rents, the value of the stations, and such points, those have been taken out of my hands for many years, and they are a part of the question. My part of the question, I think, I can answer, but not the whole of it.

1015. How would you propose to provide lodging accommodation for the additional 200 men?—I should propose, in the first instance, to place them in lodging, as we do at present with the men who cannot be accommodated at the stations, and then as time went on it would be a question for the Board whether they would continue them in lodgings, or take ground and build houses sufficient for their accommodation; but for the immediate relief of the force I could put the men into lodgings in a way which, although not perfect, would be satisfactory to us and to them.

1016. In this estimate of additional cost I understand you do not take into account any estimate for lodgings and increased accommodation?—No, I do not, merely the wages account.

1017. How would that be affected?—The amount would be increased by a sum of not very much less than 20,000 *l.* a year; in fact the increase of the wages account would be about in proportion to the increase of the number, namely, about 50 per cent.

1018. That would be 20,000 *l.* a year; then I do not see if the wages of 200 men came to 20,000 *l.* how you can have 535 more men, and the additional number of engines, escapes, and stations that you suggest, for an additional cost of 50,000 *l.*?—I think these figures are correct. I have no reason to doubt that the estimate of 120,000 *l.* is quite correct. In this account I have taken also the re-arrangement of the classes.

1019. If some arrangement could be made by which every police station were an auxiliary station, with a hand pump or some other appliance for taking to the spot immediately when the news of a fire is brought, and before your men could arrive, the present stations would, you think, be sufficient?—I think in many cases they would; perhaps in most cases, but perhaps not in all.

1020. Do you see any reason why there should not be some appliance for putting out a fire kept at every police station?—I think it would be exceedingly desirable to have such an arrangement if the question of responsibility in the matter could be settled.

1021. Have you formed any idea of how that question of responsibility could be arranged?—No, the matter has never come before me. It would, I think, be very difficult of arrangement. I do not say that it would be impossible, but I say that I think there would be great difficulties in the way of it.

1022. You think that whatever arrangement of that kind may ultimately be made, it would be necessary that your officers should take the command immediately

immediately they came to the fire?—Yes, and that is where the difficulty would arise in the police giving us entire charge of their men for that time.

1023. Do you think that there would be any serious difficulty about that if there were only a few men who came there at the very first moment of the breaking out of the fire. When your men came with their full force, the police would be superseded by your men, would they not?—Not necessarily so; it would be more beneficial that they should in some way work together.

1024. But I think that a very important object would be to have some system by which the police, before the engines came, should commence work at a fire; do you not think so?—I think it would be most useful if some such arrangement could be settled.

1025. If an arrangement of that kind could be adopted you do not think it would be necessary to adopt your proposal of 1872, for the increase of stations and engines?—No, I do not.

1026. So that with your additional 200 men, and some arrangement of that kind, you would consider it would be a perfectly efficient brigade for the preservation of London from loss by fire?—Yes, I am not sure that it would not be a better brigade than I have proposed for this larger sum if that question could be settled; but this question is a very important one, and I have a very strong sense of the evils of a divided responsibility, and at present see no way of getting over it.

1027. I suppose at all fires now the police are present to keep order in the crowd?—Yes, they are.

1028. Of course you have no power over them at present?—No, we have no power, except that our requests to them are treated very much like orders; I do not think I have ever known a request refused.

1029. Mr. *Onslow.*] If that is the case now, what would be the difficulty in your superintending officers having the superintendence of the police at fires?—There is a question of the machinery to be entrusted to them; they would then have the applying of water to the fire, and they would, to a certain extent, absolutely have to work under orders, which is quite a different thing.

1030. Do you think the police would object to that?—I have not consulted them upon the point; it would certainly make a very great difference in their duties.

1031. Mr. *Ritchie.*] You promised to give the Committee a list of the number of lives saved?—Since we have had charge of the fire escapes, but commencing only at the beginning of the year 1868, and ending on the 31st December 1875, there have been endangered by fire in London altogether 1,197 lives; of these, 957 have been saved, and 240 have been lost.

1032. *Chairman.*] Does the 240 include those who have died after having been saved from the fire?—I was just going to mention that point; of those who were lost many were taken out alive, but died afterwards in hospitals and other places.

1033. Have you the number of those?—I have not made it up as a total number, but I could give the number for any one year.

1034. It adds to the number of lives practically saved?—Last year 29 lives were lost; of those, 14 persons were taken out alive and died afterwards, and 15 were either suffocated or burnt to death.

1035. Mr. *Ritchie.*] I suppose when taken out alive, they are probably very far gone?—Yes, in some cases; in others, not so; they die of the shock.

1036. *Chairman.*] The same exertions were probably made in the one case as in the other?—Yes, the same exertions precisely.

1037. Mr. *Ritchie.*] Is it owing to the late arrival of the fire-escape, as a rule, that those lives were lost?—No; many lives are lost at times when the fire-escapes are not out. There are many cases of women going out and locking the door, and a fire breaking out, and the first intimation they have of it is that they go into the room and find the children burnt to death, even the people in the house knowing nothing about it. In those cases, there are no means of getting any information about the fire breaking out. We include in our return every case we hear of. We hear of many cases for the first time in the newspapers, and we include even those.

1038. Mr. *Hardcastle.*] Therefore your return does not give any real idea of the value of the fire-escapes?—We have no object in saying how valuable our

Captain *E. M. Shaw.*

4 May 1876.

services are. We give the cases as they occur. With regard to the number 1,197, that does not give the value of the services of the fire-escapes, because I give many cases of saving life which are not saved by our people at all.

1039. Mr. *Ritchie.*] What do you call lives being endangered?—I put down all the lives we have had anything to do with at fires, and those which, I say, we hear of which are lost.

1040. Do you think it necessary to have an increased number of fire-escapes?—I think it would be desirable to have an increased number of fire-escapes.

1041. You recommend that the number should be 200?—Yes; I think it would be desirable for London to have 200 fire-escapes.

1042. Of course if you had 200 fire escapes, the increase of men which you originally spoke of would not be sufficient; you do not include in that number any additional number for fire-escapes?—No; I include no additional duty of any kind beyond what we are called upon to do at present.

1043. Is one man sufficient for a fire-escape?—It is very desirable to have two men, but I do not think it is absolutely necessary.

1044. I suppose he can very often get assistance?—Almost always; there are cases in which difficulties arise, but not very many.

1045. The amount of money spent by the Metropolitan Board upon the brigade appears to be very much in excess of your original estimate of 50,000 *l.*; can you account for the increase of 50 per cent.?—I do not think the present brigade represents an expenditure based upon my estimate of 50,000 *l.* The present expenditure rather represents an expenditure based upon my larger estimate of 70,000 *l.*

1046. In what way?—Taking the funds expended, they are expended somewhat in accordance with the 70,000 *l.* a year estimate.

1047. In your 70,000 *l.* estimate, you estimated for a much larger number of men, a much larger number of stations, and a much larger number of engines, did you not?—Yes.

1048. With all that, the cost of the brigade is in excess of your original estimate?—Yes, it is.

1049. Of course the wages have been increased?—Yes, the wages have been increased.

1050. Can you tell me in what other way the great difference is made up?—I think every item of expenditure has been increased since those days. The wages have certainly been very largely increased.

1051. Can you tell me the cost of the establishment charges in the present brigade?—It is not within my department. I see it sometimes, but I have not to deal with that.

1052. What were the establishment charges under the old system?—There were no establishment charges. The committee was an honorary committee.

1053. Was the writing, and all that kind of thing, done by your own men?—Everything was done by our men.

1054. Are you acquainted with the system under which the Liverpool Fire Brigade work?—Yes, more or less.

1055. The Liverpool Fire Brigade are amalgamated with the police, are they not?—Yes, they are the police.

1056. Is there any separate body of police who attend at fires, or are all the police more or less firemen?—I really think that all the police are more or less trained, but there is a special body of them called firemen, who do the bulk of the work.

1057. Do you know anything about the cost of the Liverpool work?—No, I am not able to speak to that; I can get the figures; with a little notice I can give any information of that kind; in fact, I have it in the room, but it is difficult to give it by word of mouth without a little preparation.

1058. Do you know whether the per-centage of serious fires in the total number is greater in London than in Liverpool?—I should suppose that the proportion of serious fires is larger in London, but I am not able to say exactly.

1059. Do you know anything about the arrangements for putting out fires which exist in some of the large continental cities?—Yes, I do.

1060. Is there anything special in that respect which you would like to draw our

our attention to?—I know nothing in any of the continental cities of Europe applicable to our condition of things here; the property here is too great. It is too much massed in certain places to allow of any arrangement on the continental plan, with anything approaching to safety.

1061. But do you know of any means adopted in any city on the continent which you would recommend for adoption here?—No, I know of no means in any part of the world which are fit for London that we have not adopted as far as it was possible to do under our circumstances. I can give information about many of the cities of America if desired, and also Paris, Hamburg, Berlin, and others, but I know of nothing in any of those cities which is at all applicable to the condition of things in London.

1062. I suppose you have made the question of the mode of putting out fires in those cities somewhat of a study?—Yes, I have studied the matter for years, and with a little preparation I could give the most minute details about them all.

1063. But you would not be prepared to make any recommendations to the Committee based upon what you know of the method of putting out fires in America, or on the continent of Europe?—No, neither on the continent nor in America.

1064. Mr. *Hankey.*] Do you know whether any of the arrangements in any of the towns in England are better than in London; the arrangements in Manchester, for instance?—I think that in many of the towns in England their arrangements are thoroughly well adapted for their own purposes, but I cannot say that I think they are suitable for London. The condition of London in many of these matters is very exceptional.

1065. *Chairman.*] Have you seen the working of the system in such towns as Manchester and Liverpool?—I have.

1066. And Glasgow also?—Yes, Glasgow and Edinburgh, and in all the important towns upon the continent.

1067. And what you would wish to impress upon the Committee is that the circumstances of London are so peculiar from the mass of houses and value of the property that the experience of the working of the system adopted in those towns hardly applies to London?—It is not applicable at all.

1068. Mr. *Ritchie.*] With regard to the number of men available in other cities, do you know the number of men available in Paris, for example?—I spent some time last September in Paris with the pompiers. I do not happen to have the papers with me by which I could answer the question; roughly speaking, there were about 1,600 men in Paris, but if the Committee desire it, I should rather prepare a short Table, giving a comparison of those towns with London, which I could do, and hand in. The Committee will observe from the enormous size of this Table (*producing a Table*) how difficult it would be to give it at once in anything like an intelligible form. This is a Table of all cities of any importance. I have all the figures there with perfect accuracy, but if the Committee would give me the heads under which they wish the figures to be placed, I would give them the required information.

1069. Sir *James Hogg.*] Would it not be a good plan to state whether the men in those cities are confined to the duties of firemen, or whether they do anything else?—I could do that. In Paris, the pompiers are also soldiers; they take charge of all the theatres, and act as a preventive service as well as an extinguishing service.

1070. Mr. *Hankey.*] Have you ever been to Hamburg?—I have been to Hamburg.

1071. Do you know the fire arrangements at Hamburg?—I did know the fire arrangements at Hamburg very well indeed a few years ago.

1072. But since this new arrangement do you know them?—I was there about eight years ago; I forget the exact time.

1073. But since the great fire?—Yes, since the great fire.

1074. Do you consider their arrangements are very perfect?—No, I do not think they are very perfect, but I think they are very suitable for Hamburg; the conditions of Hamburg are very different from the conditions of London; they have a very effective water service in Hamburg.

1075. Mr. *Hardcastle.*] You mentioned that in Paris the pompiers are also employed as soldiers; is the like the case in England at all?—In Liverpool the police force is increased by a certain number who do duty as firemen.

Captain *E. M. Shaw.*

4 May 1876.

1076. Would the same remark apply to Manchester and Glasgow?—No; in Manchester I do not think that the police act as firemen.

1077. Mr. *Ritchie.*] The evidence before the Committee in 1867 showed a decidedly defective supply of water in London; has anything been done since then to make any improvement in the supply of water?—Yes; I think that since 1867 the water supply of London, all round, has been very considerably improved.

1078. Has anything been done by the Metropolitan Board of Works to enable the fire brigade to take advantage of the increased water supply?—Yes, the Board have laid down some hydrants.

1079. Can you tell the Committee how many?—No, I am not able to answer that, but I think the answer could be obtained from the Board.

1080. How many instances of deficient water supply occurred last year?—There were 32 cases last year in which the water arrangements were unsatisfactory, four cases of short supply, 19 of late attendance of the turncocks, and nine of no attendance.

1081. Whose business is it to get the turncock?—It is the business of the public, I think, to get the turncock, but it is chiefly done by our own people and by the police; the public very often forget the turncock.

1082. Does it not sometimes occur that your engines arrive on the scene of a fire, and that no one has gone for a turncock at all?—That does happen sometimes, but very rarely; it is an exceptional state of things. As a rule, all possible efforts are made both by the police and the firemen to obtain the attendance of the turncock.

1083. Until, of course, you have a constant supply you are entirely dependent upon the turncock for your supply of water?—That happens, but not often; there are cases in which we can get the water ourselves.

1084. Your men carry tools with them to get it, do they not?—Yes.

1085. But in consequence of not knowing the water arrangements of the districts the firemen are unable to make use of them, is not that the case?—In consequence of not knowing what has last been done with the water pipes of the district they are unable to make use of them in some cases.

1086. Would it not be a very desirable thing that the turncocks should live at the stations?—It would be a desirable thing that the turncocks should live near the stations.

1087. Is it not the fact that the water companies have over and over again represented to the Metropolitan Board of Works that they would be willing to pay for the housing of the turncocks at the stations?—I believe it is.

1088. Has anything been done at all to take advantage of that offer?—I believe that the water companies were informed (I am not quite able to answer the question) that there was no reason why the turncocks should not take lodgings in the immediate vicinity of the stations, in the same way that the Metropolitan Board of Works has to do for its own men.

1089. I suppose you have not accommodation to house the turncocks at the stations?—We have not accommodation to house the turncocks at the stations; it would be quite impossible for us to take them in without turning out some firemen.

1090. But this offer was made a great many years ago, was it not?—I think it was; I think it was made to me before I was under the Board; I am sure it has been made often, but when I cannot say.

1091. But a great many stations have been built since the offer was made?—Yes.

1092. And no provision, as a matter of fact, has been made for housing the turncocks?—As a matter of fact no provision has been made for housing the turncocks; but I think it is right to add that I do not think it desirable to supply that accommodation within the walls of the station. I think it would be a serious interference with the duties of the officer in charge to lodge anyone under his roof who is not under his control.

1093. *Chairman.*] The evidence which you gave the other day was that the turncock was often upon a distant part of his beat engaged upon the duties he has to perform, and that, therefore, the mere fact of his lodging there would not meet the case, unless there was a special turncock acquainted with all the mains kept at the station, with no other duties except to attend fires?—That would be so.

1094. Mr. *Ritchie.*] Where are the addresses of the turncocks written or printed up?—The addresses are in every station.

1095. I understood you to say, in answer to a question put by the honourable Chairman on the first day of this inquiry, that the Metropolitan Board of Works until lately wrote about the late attendance of the turncocks, and that they do not do so now?—That is the case.

1096. Do you know why they do not do so now?—I do not know, but I think that will be explained by members of the Board.

1097. Do not you think it very desirable that in every case of late attendance of turncocks the attention of the water companies should be called to it?—I do not know that it is very desirable; from my own personal point of view it was never important.

1098. There were tablets marked up showing the position of the fire-plugs?—Yes, and there are still in many cases.

1099. Is it not the case that the marking of these tablets has, to a considerable extent, been discontinued?—I am afraid that there are a great many plugs which are not properly marked.

1100. Do not you think that that is a highly objectionable state of things?—I think it would be better that the plugs should be marked.

1101. Do you know why they have not been marked?—No, I know nothing of that part of the question.

1102. Owing to the plugs not being marked, have you not had great difficulty in finding those plugs?—Occasionally, but very rarely.

1103. In the time of the old London Fire Brigade every plug was marked, was it not?—I think, speaking generally, that every plug was marked at that time.

1104. It is a fact, is it not, that every year the constant supply system has been spreading more and more throughout London?—Speaking generally, yes.

1105. And in some districts the constant supply system is very general, is it not?—Yes, in some districts it is very general.

1106. The East London Water Company have a large proportion of their area laid down under that system, have they not?—Yes; the East London Water Company have a large portion of constant supply.

1107. Is it the fact that the East London Water Company have mains under pressure extending for about 70 miles of streets?—They profess to have water under pressure for 70 miles of pipes, and I have no doubt that they have water under pressure for very nearly 70 miles of streets.

1108. That pressure is constant day and night at all hours?—Yes, it is constant day and night at all hours.

1109. Have any hydrants been put up by the Metropolitan Board of Works to take advantage of this supply in the East London districts?—I am unable to answer the question; my knowledge of the subject is not sufficient.

1110. Do the representations from the water companies, as to their having laid down the constant supply, come through your hands?—No, not through my hands.

1111. Do you think it would tend very much to the prompt extinguishment of fires if hydrants were established?—I think it would.

1112. Do you see any reason why advantage should not be taken of it in those districts where there is a constant supply, even though the constant supply is not general throughout London?—It is a very difficult question to answer; I really believe that it would not pay the Metropolitan Board of Works, or the metropolis at large, to lay down hydrants over only that portion of the metropolis; it is a question of general policy, not for an official like myself to deal with; but I cannot fancy that it would pay the Metropolitan Board of Works to establish hydrants wherever there is any intermittent water supply at all; of course I acknowledge that it would be a great advantage to have a proper means of getting at the water wherever the water is under pressure, but as I say I do not think it would pay the Metropolitan Board of Works now to put on expensive hydrants where there is any intermittent system; it is a most difficult question; I do not answer absolutely upon the point; I only give my opinion upon it.

1113. Do you know what proportion of the property which is destroyed is insured;

Captain *E. M. Shaw.*

4 May 1876.

insured; have you any table which would show that to the Committee?—No, I cannot answer that question; individual cases of course I know, but not the whole.

1114. You have already given the Committee evidence that the severity of fires has very much diminished?—Yes, I have.

1115. Do not you think that if your brigade were further increased you might look for a further decrease in the severity of fires?—Yes, I think so.

1116. Would you like to make any suggestion with reference to the better prevention of what is commonly called fraudulent fires?—I never was a believer in the great number of fraudulent fires which one hears of sometimes; I do not now believe it; I think very few fires are really fraudulent, although I think that fraudulent claims may be very numerous; I presume you refer to places set fire to by proprietors or others for their own gain, and to that my answer would apply.

1117. Mr. *Hankey.*] Is it any part of your duty to consider whether a fire has been fraudulent?—I am not very sure that it is; we ascertain as far as we can the causes of fires, and when we cannot make them out in a manner satisfactory to ourselves, we set them down as "doubtful," and then afterwards if a trial has taken place about it, and the man is convicted, I take out the word "doubtful" from my returns, and put in the word "arson" or "incendiary," or whatever it may be.

1118. Sir *James Hogg.*] You know that there are constant prosecutions in cases of fire?—Yes, I do.

1119. Mr. *Locke.*] Are you called upon to give evidence in those cases?—Very seldom; I have been, but very rarely; my evidence would only commence from the time of my arrival at the fire, and the general condition of circumstances then; the best evidence would be that of neighbours, who would have an opportunity of examining it long before the arrival of the fireman.

1120. But those who are at the fire whom you employ would be called, would they not?—Yes, they might be.

1121. *Chairman.*] Suppose in your return, or in your statement, you placed a fire under the head of "wilful fire," or "arson," your men would be called as witnesses in that case, would they not?—But such cases have never occurred, because I do not decide that a fire is an incendiary fire, or wilful in any way, until after a jury has decided the matter. I cannot set down that a man's fire is wilful, unless I have some proof, and we are not in a position to bring forward proof.

1122. But in the event of your men, on arriving at a fire, seeing a condition of things which would lead them to think that the fire had been caused by an incendiary, do you say that you would not report that until a jury had tried the case?—I would not enter it into my official report until it had been proved, but what we should do would be to give information to the police, and they and the proprietors and others would go into the question.

1123. And in that way, when an investigation occurred subsequently, you would be brought as witnesses, would you not?—Yes, we should then be brought as witnesses.

1124. Mr. *Ritchie.*] Was there an understanding by the insurance companies, when they were required by the Act of 1865 to contribute towards the expenses of the fire brigade, that the requirements for the protection of property against fire in the neighbourhood of the docks should be specially considered, as they had been previously to the passing of the Act?—I am hardly able to speak to that, but if I saw the returns I could tell in a moment; the Board minutes would show it.

1125. If there were any understanding of that kind, has it been practically carried out?—I think the protection to the docks is now greater than it ever was.

1126. One station in Wellclose-square has been taken away from the neighbourhood of the docks?—It has.

1127. But you still think that, notwithstanding that, the protection to the docks is greater than it was under the old London Fire Brigade?—Yes, I think it is.

1128. Sir *James Hogg.*] Is it not the case that from this new station, which the Metropolitan Board have established, the run is better and through larger streets,

streets, and easier of access to the docks than it was before?—No, I am afraid hardly so, because they have to pass through some of the same streets; but I would answer in general terms that I do not think the docks have lost by that change of arrangement.

1129. Mr. *Ritchie.*] The new station which was built was only built in the neighbourhood of one which had existed before?—Yes, that is so.

1130. So you had that one and the one in Wellclose-square in addition?—Yes, but there are advantages about the new station that there were not about the old one, so that there has been a gain there in the way of protection.

1131. But I am speaking especially with regard to the docks?—Yes, with regard to the docks. The only difference is, that the men have a longer run who bring the first information. Excepting that, everything is in favour of the present station.

1132. I am desired to ask this question: Do you know whether it was understood by the fire insurance offices that their contribution to the new fire brigade should not amount to more than 10,000 *l.*?—No, I cannot answer that question. I think they must have expected to pay more, for I think their first payment was more.

1133. Sir *James Hogg.*] But the original proposition was 10,000 *l.*, was it not?—I do not know that.

1134. Mr. *Ritchie.*] I suppose we may assume that if the proportion of serious fires is diminished that is beneficial to the insurance companies?—Of course, it would be partly beneficial to the insurance companies, but much more so to the public.

1135. Mr. *Onslow.*] What class of men do you get now into the service?—The same that we have always got; sailors.

1136. They are nearly all sailors?—They are all sailors, we take no others.

1137. Then I suppose that those men are all medically examined before they enter your service?—They are all subjected to a most careful medical examination.

1138. You think that it would be practically impossible to devise any better means for fires being made known to the brigade offices than by the police or the general public?—Yes, I think it is decidedly so.

1139. Can you give the Committee any estimate of the amount of property destroyed year by year by fire since the Metropolitan Board of Works undertook the duties of the fire brigade?—I am afraid I can hardly do that; the accounts of the insurance companies in that particular are very private. I think I could tell what the insurance companies would probably estimate it at, but I would really recommend the Committee not to take the figures from me. I can, of course, give the figures according to their estimate, but I cannot even say that I would agree in their estimate. I should doubt very much whether this information exists; no company publishes its private accounts.

1140. You are assisted not only by the policemen on duty where a fire occurs, but also by other policemen, are you not?—Yes; the police, I believe, bring reinforcements as quickly as they can upon those occasions.

1141. But I mean that you are assisted by other police on duty in the district?—Yes, undoubtedly so.

1142. Therefore a great proportion of the streets in that neighbourhood would be practically unprotected during the progress of a fire?—I do not know of that; however, I suppose they double the beats. I do not think there are many cases of robbery during fires.

1143. How long is a man on duty on any particular fire-escape?—As a rule previously to the first of this month, a man was on duty from eight at night until seven in the morning; since the first of this month he is on duty from nine at night till six in the morning. That is because we change on the 1st of May for the four summer months; we reduce the time by two hours.

1144. Would you give the Committee some insight into the way in which your brigade is horsed?—Yes; we have three modes of horsing. One is we employ a man who provides the necessary number of horses and drivers, and charges so much a run. Another way is that a man puts in the necessary number of horses and the drivers, or the necessary number of horses without the drivers, and charges a certain amount each year for each horse; and the third is a mixed way, in which we make a moderate payment for the constant attend-

Captain *E. M. Shaw.*

4 May 1876.

ance of the necessary number of horses and drivers, and pay so much a run besides.

1145. You have no horses actually belonging to the brigade?—We have no horses actually the property of the brigade.

1146. Have you ever made any calculation with reference to what the extra cost would be in giving London a constant supply of water sufficient for your purposes?—No, it is quite out of my line of business. I know the general calculations which have been made, but I could not give evidence before this Committee about them.

1147. Do you think there has been any material loss of life and property where there has been only an intermittent supply of water which could have been avoided had there been a constant supply?—Yes; perhaps not loss of life, but property, certainly.

1148. Could you give any instance of that?—It seems almost invidious to point out the cases. I attribute personally no blame in the matter, but there have been places in which we had no water in sufficient time to stop fires. In the neighbourhood of Bermondsey and Rotherhithe such cases have occurred.

1149. In your opinion, is there any particular company which does not give you the same facility as another company does?—There are certainly some districts in London where the same facilities do not exist. For instance, there are places which a few years ago were covered with very small houses, and had very small water-pipes leading to them. Those small houses have been pulled down, and very large warehouses have been built in their place, while the water-pipes remain the same as they were before, and, as we understand, the water companies lose instead of gaining by the change.

1150. What do you consider the worse part of London as regards the supply of water as far as you are concerned?—I think about the neighbourhood of Bermondsey and Rotherhithe; close to the water-side.

1151. I understand you to state that at the present time the cost of the fire brigade is 70,000 *l.*?—It is over that. I believe it is over 75,000*l.*; but I believe that would be obtained from the books of the Board.

1152. In the case of a fire on the river, or where you require your river engines, how do you communicate with them?—We send a man to order them to attend.

1153. You have no means of telegraphing?—No; we send to the nearest station, and the nearest station sends a man down.

1154. How many men are always on duty at each river-engine?—The engines are all of different sizes, and there is a different number of men on duty. There are enough men to keep a watch and to prepare the fires, and there is always a pilot in attendance with each.

1155. Can you tell the Committee the mileage of the river, as far as it lies under the jurisdiction of the Metropolitan Board?—Yes, it is about 22½ miles within the jurisdiction of the Board. It commences at a part of Chiswick Mall known as British Grove, and ends at the Magazine below Barking Point.

1156. Then for this mileage how many engines have you at the present time?—We have four.

1157. Practically those four engines are for the defence of 45 miles of river, because you must take both banks?—Yes, that is so.

1158. And you have proposed to the Board of Works to increase the number of river fire-engines by four?—I have made a proposal to the Board about the matter, but I do not think it has been given in evidence, although it may have been in this paper which I have handed in; but I do not think that calculation of double distance would apply to this question. Of course, accurately speaking, it is so; but then a water fire-engine is equally available for both sides of the river. I think it is a much fairer calculation to take it as 22 miles and 54 yards, seeing that any one of those vessels can travel to those distant parts without doubling the distance; I do not think the distance should be counted twice over.

1159. Your calculation of the extra number of engines is not based upon doubling the sides of the river?—No, it is based upon the total length of the river; in fact, strictly speaking, both sides of the river could not be counted, for there are parts, for instance, of the A. district which are upon the riverside, as shown by the map, and the corresponding parts on the south side do not belong

belong to our D district, but are out of bounds; and the same thing occurs in the opposite way at the eastern end; that is to say, that there are several miles upon the south side of the river within our D district, while the corresponding shore upon the opposite side is not in any district; it is out of bounds. I think that, for the purpose of protection from fire, the river should be counted as I have counted it, namely, upon the simple distance. I have taken my distance along the line running through the middle of the river from end to end.

1160. Is the work heavier upon the river engines than upon the land engines?—No, it is very much lighter; the watches have to be kept up; they are the same, but the work of extinguishing fires is very much lighter. It is very heavy when it comes, but it comes very rarely,

1161. Mr. *Ritchie.*] How often are those floats under repair?—I expected to be asked that question, and I have made out a Table of it. I do not think that question could be answered exactly in the terms in which it is put. Of course the floats are under repair occasionally; sometimes for trifling repairs; sometimes for important repairs; but I can give the time during which they have been under repair for the last year, or the last few years, if the Committee would wish.

1162. Will you give the Committee the time for last year?—One of our floating engines was disabled last year 27 days, another 45 days, a third not at all, and the fourth 243 days.

1163. Two hundred and forty-three days out of the 365 days?—Yes; there was a very important alteration and repair going on in her.

1164. And while she was under repair in that way, what other provision was made?—I procured a barge, and placed a large land steam fire-engine in the barge, and employed tug boats to take it about when necessary.

1165. Do you often find that these large floating steam-engines cannot go to places where they ought to go, in consequence of their draught of water?—Occasionally, but very seldom.

1166. Do you think they would be more efficient for the protection of the property upon the river if there were an increased number of small floats instead of these three or four large ones?—I think it is a question which might be very well considered in connection with any increase of the fire-engines, but I do not think that any of the existing large engines should be abolished. All that I think will be found fully treated of in the reports. It was intended to be put in, and I think I must have put it in.

1167. Mr. *Onslow.*] At what speed can those engines go?—They travel at varying speeds. I think about eight or nine miles an hour is sufficient for the purposes of the river. That applies to three of them; the fourth has no means of propulsion.

1168. You get all necessary conveniences from the Thames Conservancy, I presume?—Yes, everything that the Thames police and the Thames Conservancy can do they do for us, and also the river-side population help us very much.

1169. Do you find that the Thames Conservancy give you assistance in the way of giving information?—No, they give us principally assistance in providing mooring places. The Thames police assist us very largely whenever there are waterside fires.

1170. Has the Metropolitan Board of Works laid down any rule that you are not necessarily to consider a fire serious where there has been loss of life?—No, they have laid down no rule upon the subject.

1171. It is a rule which you yourself have laid down?—Yes. As I endeavoured to explain at the last meeting of the Committee, that arrangement is entirely arbitrary. We take it according to our experience, and I do not think we ever go against what would be the experience of this Committee, if I were to represent the case of any individual fire.

1172. You are against the system of rewards being given to the men, are you not?—I should greatly prefer to have a recognition of their services to rewards. I should infinitely prefer a badge or medal.

1173. You do not approve of pecuniary recognition?—No, I never was an advocate for pecuniary recognition in those cases. I should not object to it, but I should certainly like to see a formal recognition of every case of merit.

1174. Do you know if many of your men subscribe to friendly societies?—I

Captain *E. M. Shaw.*

4 May 1876.

can hardly answer the question. I should say about a third or fourth, perhaps; but all that is a private affair of the men which, of course, I never enter largely into.

1175. Can you tell the Committee how much of the property of London is insured?—I can tell the amount insured. It is 540,000,000 *l.*

1176. Sir *Henry Peek.*] I think you told the Committee that the total value was 1,560,000,000 *l.*?—The total value of London, according to the old mode of calculation, would be estimated at 1,620,000,000 *l.* The old mode of calculating was to assume that one-third of the insurable property was insured; therefore, given as a basis that there is an amount of 540,000,000 *l.* insured, the total value of the property in London would be 1,620,000,000 *l.*, and that is the figure which I gave. That is not exactly my calculation, and not my figure, because of course I cannot be ignorant of the fact that, within the last few years, a great impetus must have been given to insurance by the removal of the duty; therefore, in all my calculations for the protection of London, I have assumed that a very large reduction upon the 1,620,000,000 *l.* ought to be made, and I have considered that 1,200,000,000 *l.* would be a much fairer figure at which to set the value, taking 540,000,000 *l.* as the amount insured. Of course the Committee know that I am somewhat out of my latitude in giving these figures, but I must make some estimate to justify my expenditure, and the only basis upon which we can go is a calculation upon the insured property of London. I do not at all pretend that it is accurate, but I think it is as near accuracy as any other calculation I ever heard of upon the subject.

1177. *Chairman.*] You would rather the Committee considered that representation of the value of the property in the metropolis than the 1,620,000,000 *l.* which you gave at Question No. 232?—That is so.

1178. Mr. *Onslow.*] You have had no assistance from the insurance companies in forming this calculation?—No; but I served under the old insurance companies, and I know what the calculation was, and it was as near as it could be got at.

1179. Besides the engines that are in your brigade, do you know how many private engines there are in London?—I do not know that I can answer the question exactly, but there are persons who come out and give us voluntary assistance. In Union-street, Chelsea, there was until lately, and perhaps there is now, a manual engine. In the neighbourhood of Kilburn there was a small steam-engine; at Highgate there was a manual engine; in Kentish Town there was a sort of station, but I cannot state whether they had an engine or not; at Pentonville there was a truck with a stand pipe and some hose, I think; at Upper Clapton there was a manual engine; in Larkhall-lane, Clapham, there is a steam-engine and a manual engine; in Sussex-road, Brixton, these is a steam and a manual engine; at Streatham there is a manual engine; at Forest-hill a manual engine, but I cannot quite answer for the accuracy of this statement; they assert that they have them, and I think in most cases they have, but we cannot make them responsible for having them.

1180. Do you ever, in case of fire, send for any of these engines to assist you?—We never send for them.

1181. But they come?—They come and give us assistance according to their ability.

1182. What is the average number of hours' duty per diem of the men in your brigade?—I think that will be found fully stated in this report.

1183. Do you know what is the average number of hours duty in the police? I do not know that.

1184. I have heard it reported, I do not know with what truth, that in some cases where fire insurance offices know or suspect that there has been a fraudulent fire, they decline to prosecute, because by so doing they may get a bad name; what is your opinion upon that point?—I am afraid my opinion upon that matter is not worth very much. Of course I have heard such statements made, and I have also heard them contradicted, but it is obvious that it must be an influence in some way with the insurance companies. I know that when I served under the insurance companies there was a very decided unwillingness to become public prosecutors on their part.

1185. Sir *Henry Peek.*] Do you have yourself a regular holiday every year?—Not a regular holiday, but I get away every year.

1186. Do

1186. Do you get away for a month?—About that. For many years I got away about eight or ten days in the year. Now regularly I can get away for twice or three times that length of time if necessary.

1187. I thought you stated that the whole staff was so much overworked that you required two extra superintendents; I think you are the chief?—Yes, I am.

1188. You want two more, if I understand you rightly, to carry out properly the existing machinery?—Yes, I think we ought to have two more superintendents. The Committee will observe on the map that there are three districts on the north side of the river, and one upon the south. I think London would be very much stronger by dividing the north into four districts, and the south into two. That would render necessary an increase of two superintendents.

1189. Do those superintendents have a regular holiday?—Not a regular holiday, but we give them all the leave that is possible. They invariably get about 14 days' leave in the year.

1190. Have you any maps of the mains of the different stations?—Not in the different stations. We have seen the maps of the mains many times at the water companies' offices, and elsewhere, but we have not any maps of the mains at the stations.

1191. An important new main might be opened without your knowing anything about it, might it not?—I do not think so. Our men are very intelligent, and associate, to a certain extent, with the turncocks, and know the changes which are made.

1192. You do not therefore shift the men more than you can help?—We do not shift the men more than we can help, but we do shift them to a certain extent; it is not well to leave men in the same district too long.

1193. Are the water companies paid for the water used in putting out fire?—No, they are not paid for it.

1194. Then it is their interest to keep the supply back rather than to give their stock for nothing?—They are, I believe, obliged to give their stock for nothing; such water as they have.

1195. Do not you think there should be an inquiry into the case of every fire?—No, I do not think the inhabitants of London would tolerate it.

1196. It would not be an invidious thing if there were an inquiry on every fire?—It would be very objectionable to most people.

1197. If I understand you rightly the cases of arson are so few and far between that practically that would not be necessary?—I think so, although I should like to see the power of holding an inquiry in certain cases where there was not a loss of life; at present it is limited to cases in which there is loss of life or a direct charge made by somebody; I should like to see existing a power of holding an inquiry in suspicious cases.

1198. In whom would you vest that power of initiating the inquiry?—It is hardly for me to say; perhaps in the police.

1199. Although you would not wish an inquiry into every fire, still you are of opinion that there are cases in which, in the interest of public justice, it would be desirable to have an inquiry?—Decidedly, I am of that opinion.

1200. Although there might be no loss of life?—Quite so.

1201. Nor any chance of loss of life?—Quite so; I think, in certain cases, it is very desirable that that power should exist.

1202. Mr. *Clifton.*] Can you define the term "doubtful," in your reports?—It is simply the literal meaning of the word; signifying that I had my doubts.

1203. It is not that you do not know the origin of the fire?—Very often we do, but I do not think it would do for a public body like ourselves to charge a man with a very grave crime unless we had positive evidence of it, and also unless it became our duty to move in the matter, which it certainly is not now. I should, notwithstanding my large experience of fires, be as ignorant of conducting a prosecution as anyone in the world would be. I should have no notion of how to go about it.

1204. Have any of the men that you have recommended to the Metropolitan Board of Works for gratuities for merit in saving life from fire complained of having no notice taken of your report?—Yes, they have.

1205. Have any men left on that account?—No, I cannot say that. I do not

Captain *E. M. Shaw.*

4 May 1876.

not know that they have ever absolutely assigned that to me as a reason for their leaving, although I know they have felt very sore about it.

1206. What shape has that complaint taken?—Every year a certain number of men are recommended to the Board for saving life, and they send on the recommendations to a charitable society which exists; that charitable society gives rewards to our men in certain cases, and refuses them in others. Our men have always felt rather sore about the mode of inquiry in those cases. They have found themselves as experienced men commended by their own officers, and not rewarded by the society, because persons wholly unskilled in the business had reported in a way adverse to the report of their own officers.

1207. Have the Committee inspected the force?—No, I think not.

1208. Nor taken steps to inquire into the actual management of the force?—No, I do not think it would be possible for them to do so, beyond looking at the men and their engines. They have seen the men and engines occasionally.

1209. Can you tell me how long it is since the men first applied for a superannuation fund?—I think it will be found in this Paper. I can hardly remember the date, but it is a good while ago.

1210. Did the Metropolitan Board of Works take any notice of the first application?—All that again will be found in these papers; I am hardly able to answer off-hand. The men have put in my hands their statement in a pamphlet, which I understand is also in the hands of the Members of the Committee, and, as far as I know, they have put down the dates correctly, but all that will be found completely stated in the books of the Metropolitan Board of Works.

1211. Sir *James Hogg.*] Was not the fire brigade established on the basis of a letter from Sir George Grey, signed T. G. Baring, dated the 27th March 1865?—I think that was the date.

1212. I will read the letter. "Whitehall, 27th March 1865." This is directed to the Chairman of the Metropolitan Board of Works. "I am directed by Secretary Sir George Grey to acquaint you that he has had again under his consideration the possibility of making satisfactory arrangements for the protection of London and its vicinity from fire. I am to enclose, for the information of the Metropolitan Board of Works, copies of the correspondence which has taken place upon this subject since December 1863, from which you will perceive that Sir George Grey has satisfied himself that a fire brigade could be instituted, at an annual cost of 50,000*l.*, of sufficient strength to provide adequate protection to the district under the management of the Metropolitan Board. Her Majesty's Government will propose to Parliament an annual contribution of 10,000 *l.* in aid of the proposed brigade. The fire insurance companies contributing to the London Fire Engine Establishment have agreed to transfer to the proposed brigade their plant, stock, staff, and stations, subject to the existing liabilities of their establishment, free of charge, and to contribute annually a sum equal to 35 *l.* per 1,000,000 *l.* on their insurances. This contribution, calculated upon their business for 1863, would amount to 10,156 *l.* There remains to be provided a sum of about 30,000 *l.*, which could be raised, as Sir George Grey is informed, by a rate of one halfpenny in the pound upon the assessment for poor's rate of the district under the Metropolitan Board. The Metropolitan Board of Works having expressed themselves willing to undertake the responsibility of the new brigade, I am to request that you will be so good as to inform me whether they concur in the general arrangements now proposed, and Sir George Grey will then lose no time in communicating with them in any manner which you may suggest as most convenient as to the details of the measure which will have to be submitted to Parliament on the subject." That was the foundation of the brigade, was it not?—Yes; that is the first published letter, as far as I am aware. There were negotiations long before that, but they took no form until then.

1213. And that established a brigade, after long investigation, on the basis of 50,000 *l.*, and only 50,000 *l.* to be spent for the fire brigade?—Yes, that was so.

1214. You have stated that you gave three estimates of what you considered an efficient brigade for London. Was it not that you gave in three schemes, accompanied by detailed estimates?—Yes.

1215. To whom were those schemes sent and proposed?—They were sent to the Home Office.

1216. To

1216. To Sir George Grey?—Yes.

1217. Was the first estimate for 70,000 *l.*, besides an outlay, at first, of 65,000 *l.*?—Yes.

1218. Did not the sub-committee of the London Fire Engine Establishment in 1863 calculate the cost at 45,000 *l.* to 50,000 *l.*?—Yes.

1219. That is at page 27 of the Correspondence, is it not?—It is.

1220. Was not your estimate of 70,000 *l.* sent by Sir George Grey to Mr. Browne, the Secretary of the London Fire Brigade, in a letter dated the 9th of December 1864, in order to obtain the opinion of the Fire Brigade Committee as to whether the amount could be reduced?—It was.

1221. Is this the paragraph on page 27; this is from the letter signed by Mr. Waddington to Mr. Browne, paragraph 3: "As any arrangement upon which legislation is to be founded must depend, in a great measure, upon the rate to be levied in the metropolis, this increase in the estimated expense, if it is necessary, will raise difficulties which may be insuperable. Sir George Grey is unable himself to check the estimate, and will be obliged by the opinion of the committee whether it can be reduced. It does not appear, at first sight, why the service, which is now creditably performed for less than 35,000 *l.* per annum, including the expenses paid by the parishes, should require double that amount;" that is in the letter, is it not?—Yes.

1222. Did not the committee of the fire brigade direct you to prepare a scheme for a very effective brigade, at the cost of 50,000 *l.* per annum, inclusive of interest on the sum to be raised for outfit?—Yes, that was so.

1223. Your second estimate, which was sent to Sir George Grey, was for 52,000 *l.* annual cost, and a first outlay of 55,000 *l.*?—Yes.

1224. The scheme to which that estimate referred extended, I believe, only to the protection of the metropolis within a circle of over nine miles, with Charing Cross for a centre, and did not embrace the area under the jurisdiction of the Board, did it?—It did embrace the area under the jurisdiction of the Board.

1225. It was not so, was it?—Yes, it was my intention always.

1226. At page 32, paragraph 2, in a letter dated 27th January 1865, it is said: "That the scheme of Captain Shaw for the protection of the metropolis from fire is based upon affording protection to a district embracing nine miles in diameter from Charing Cross; the area probably is nearly equivalent to the district under the Metropolitan Board of Works; but Sir George Grey requests that the scheme may be adapted precisely to that district"?—That occurs in that letter.

1227. Did not Mr. Baring, in a letter to Mr. Browne, dated the 27th January 1865, request that the scheme might be adapted precisely to that district, and should be reduced to 50,000 *l.*, including all salaries, expenses, and interest?—Yes.

1228. You accordingly prepared your third estimate for 50,000 *l.*?—I did.

1229. Did not that scheme provide for one chief and 350 officers and firemen, and not 277 men, as stated in your answer, I think, to Question 350, put by Mr. Ritchie?—The number of men estimated by me was 351, as appears by page 35 of that document.

1230. You were asked: "Will you give the particulars of the estimate?" and the answer was, "50,000 *l.*; 277 men; 129 engines, and 89 stations." Now what I want to ask is, whether there will be 350 men and not 277?—That was a mistake; that figure 277 crept in in some way, although perhaps not in my evidence.

1231. Did not that scheme provide for one chief and 350 officers and firemen, and not 277 men?—That scheme certainly applied to 351 officers and men.

1232. Are the other figures in that same question correct as stated, namely, 129 engines and 89 stations?—That is correct.

1233. Then were not all the three schemes based upon two main principles; a widely extended distribution, with the power of concentrating and consolidating the whole forces at the shortest possible notice?—Yes, that is so.

1234. Have not those two main principles been carried out and given, as far as possible, the fullest effect to by the Metropolitan Board of Works?—Yes, I think

Captain *E. M. Shaw.*

4 May 1876.

think so; within certain limits. I think we have over-distributed, unfortunately.

1235. Have any means whatever been neglected for concentrating and consolidating the force at any given moment or occasion?—Not that I know of.

1236. Considering the matter with regard to the limited finances of the Board, has not the fullest effect been given to the principle of distribution?—I think more than that. I think the distribution has gone too far.

1237. Do you think that the Board could have done more considering that they have been restricted by Act of Parliament to a halfpenny rate?—With all respect, I really do not think I ought to be asked that question. I am only an official of the Board. Of course it would be obvious that if the money had been spent by me, I should have spent it in a different direction, but it is not for me to comment upon the proceedings of the Board at all.

1238. In your estimate, did you not reckon the wages and salaries at 29,025 *l.*?—I did.

1239. You have now 395 men?—Yes, we have now 395 men.

1240. Did not their salaries and wages for the year 1875, including clothing, exceed 41,000 *l.*?—I do not know; I cannot give those figures, but I think those figures must be correct.

1241. Have you the accounts for 1875?—No, I have not.

1242. But you will take it that it must be about that?—Yes, about that.

1243. In your estimate what did you allow for horse-hire; was not that 3,800 *l.*?—Yes.

1244. That was for 125 engines, omitting the floating steam-engines, and 89 stations?—Yes.

1245. Did not the horsing of the present force, namely, 111 engines, omitting the floating engines, distributed in 48 stations cost over 8,400 *l.*, nearly double the original estimate?—Yes.

1246. Was not that horsing done as economically as possible?—Certainly.

1247. And has not the Fire Brigade Committee held repeated meetings to try and reduce the cost of horse-hire?—Yes, the matter has been under consideration.

1248. Have you not yourself given a great deal of consideration to see how it could be done in the most economical way?—Yes.

1249. And did not the Board consider whether it would not be possible to purchase horses, and reduce the price?—Yes, they did.

1250. And by advertising widely did they try to induce people to come and do the work in a more economical way?—Yes.

1251. So that, consequently, it would have been impossible to reduce that 8,400 *l.*?—I think so.

1252. Your estimate included also 4,386 *l.* for rent?—Yes.

1253. Did not the maintenance of stations, rent, rates, taxes, insurance, and gas amount for the year 1875 to over 8,900 *l.*?—That I am not able to answer; I presume so, but I know nothing about that question.

1254. Your estimate, I think, included 1,500 *l.* for coals?—Yes.

1255. Did not the coals, coke, and oil for the year 1875 cost over 3,270 *l.*?—I think so, but that also can be got from the books.

1256. I suppose you will take it that what I state is practically correct?—Yes, certainly.

1257. What amount did you include in your estimate for maintenance of engines; was it 1,000 *l.* or 2,161 *l.*?—It was 2,161 *l.*

1258. Did not the maintenance of engines and escapes cost for the year 1875 over 6,600 *l.*?—I cannot say; I do not know; but these items can be easily got from the books.

1259. Having regard generally to the efficiency of the force, do you think that less could have been spent than has been spent?—No, I think that all the accounts for which I have certified have been as moderate as it was possible for them to be.

1260. Have not the Fire Brigade Committee gone most carefully through all the accounts, and done all that they possibly could with a due regard to efficiency to reduce the cost of the service?—Yes, they have.

1261. With your present experience, what would you now estimate as the

the annual cost for the maintenance of the number of men, engines, and stations mentioned in your third scheme; I refer to the scheme of 50,000 *l.* Having seen the working of it for ten years, would you put it a good deal higher than 50,000 *l.*?—Yes, a good deal higher than 50,000 *l.* for many of the items.

1262. How much higher would you put it?—I would put it 50 per cent. more.

1263. May I ask you, do you think the Board have not by the limitation which Parliament has placed upon its finances, been expected to do that which now seems to have been almost impossible?—I can hardly answer that question. I do not quite understand it.

1264. My question is this: If a certain force was to be kept up for 50,000 *l.*, and the expenses now cost 75,000 *l.*, with a limitation to a rate of a halfpenny in the pound by Parliament, is it not evident that the Metropolitan Board of Works have been asked by Parliament to do what is almost impossible?—Yes, in that sense they have been, I suppose.

1265. Perhaps you would rather not answer this question with regard to your first scheme. With your present knowledge, how much would that force have cost?—I should put 50 per cent. more upon that too.

1266. That is to say, 50 per cent. beyond the 70,000 *l.*?—Yes.

1267. Would you kindly refer to Question 226. I do not know whether you have answered this before. Have you made any estimate of what you think it would cost the metropolis to establish a force of 931 men, 330 engines, 200 fire-escapes, and 169 fire-engine stations; I think you said it would cost 120,000 *l.* a-year?—Yes, the estimate has been sent to the Board, and the Board has printed it.

1268. Have you prepared any estimate of outlay on capital for increasing the number of fire-engines from 111 to 330?—I cannot remember, but that scheme was put in in its entirety, and I believe printed, and I think will be found in some of the minute books of the Board.

1269. I am talking of the capital account, because you have given me the annual cost, and what I wanted to get was the capital account for the increase of engines from 111 to 330, the increase of fire-escapes to 200, and the outlay upon land for erecting 121 additional stations?—I cannot give it off-hand. I had no notice of this question; if I had I would have given it.

1270. We will begin with the fire-engines. Have you got the capital necessary for raising them from 111 to 330?—The first cost of additional fire-engines, escapes, and other appliances which would be required for an enlarged brigade represents a sum not exceeding 20,000 *l.*

1271. Would that include the additional 121 stations?—No.

1272. Then that would be something extra?—Yes.

1273. And the land would be something extra still, would it not?—I think so.

1274. Do you think that that increase would prove a benefit to the fire insurance offices?—I am not capable of answering that question. My assumption always has been, that whatever is done in a city has no reference whatever to fire insurance companies; that they arrange their premiums according to the risk, whether it is great or small.

1275. But the question points to whether the insurance companies ought not to increase their contribution?—I presume that if they kept up their premiums to the same amount as they stand at at present, of course they would be gainers by the increased protection.

1276. Is it not the duty of the fire brigade to extinguish fires, and to prevent a small fire from extending?—Yes.

1277. Has the present brigade ever failed to cope efficiently with fires which have occurred?—We must acknowledge that we have been very late in attending fires occasionally in consequence of the distance of the stations from the place where the fire was burning; but the question of efficiency in this matter is two-fold.

1278. Have there been any complaints of delays in the arrival of engines at fires which might be attributed to the weakness of the force at your command?—I could give instances in which we have been accused of delay, and upon examination it has turned out that the delay was not upon our part, but owing to causes

Captain *E. M. Shaw.*

4 May 1876.

causes over which we had no control whatever, as for instance, the question of distance.

1279. So that you believe the complaints were unfounded?—In one sense they were quite unfounded.

1280. Have you known any case in which life has been lost, owing to the want of the timely arrival of the fire-escape?—I am afraid that cases of that kind have occurred, but they have not been numerous.

1281. Could you remember one?—Of course there must have been cases in which if the fire-escape had been upon the spot at first life would have been saved, but I do not think that there have been any cases in which blame has been attributed to us after explanation.

1282. Can you state the largest number of fires which have taken place within 24 hours?—One honourable Member asked a question about the number of fires at each hour, and I prepared a table of it, which I will hand in. (*The same was handed in.*)

1283. If I ask the largest number in a week, and the largest number in a month, that would also be included in that table?—I have that all prepared, but not tabled.

1284. What is the proportion of fires per hour between the hours of eight and twelve, as compared with the proportion at other hours?—I can hardly give it in proportion at this moment, but I can give it in actual figures between eight and twelve. In the eighth hour the fires have been during the last ten years, 1,093; in the ninth hour, 1,362; in the tenth hour, 1,346; in the eleventh hour, 1,240; in the twelfth hour, 969, and then they rapidly decrease until the sixth hour in the morning, when they are only 262.

1285. Mr. *Ritchie.*] That gives an average of 1,200 an hour, does it not?—I have not made the table out in that form.

1286. And what are all the rest put together?—I can hardly give them in that shape.

1287. Wat is the total number for all the hours?—The total for the whole is 15,907.

1288. And for five hours there were 6,010?—Yes.

1289. In how many years?—In 10 years.

1290. Then practically there are 9,897 fires during the 19 hours, and between eight and twelve, there are 6,010?—Yes, I think so.

1291. Sir *James Hogg.*] You proposed to the Metropolitan Board of Works an increase of men, engines, and stations; did you suppose that increase was necessary for ordinary purposes, or did you mean it rather to cope successfully with those exceptional calamities which sometimes befall great cities?—More or less for both purposes.

1292. But I think you have stated since that that you thought, with the present arrangements, 200 men would enable you to carry on the existing duties tolerably satisfactorily?—To carry on the existing duties, decidedly.

1293. Do you think it essential that there should be only one fire brigade for the metropolis?—I do.

1294. The metropolitan police have no jurisdiction in the City, and if the police have the control, there must be two brigades, must not there?—I do not understand that.

1295. Was not the per-centage of serious to slight fires, in the year 1865, 34 of serious and 66 of slight?—Yes.

1296. Was not the per-centage reduced in the year 1872, for serious fires, from 34 to 8, and in 1875 to 11?—Yes.

1297. Having got the serious fires down to 8 per cent., how much lower do you think you will get them with this larger brigade?—That is a question which, as a professional man, I could not answer, but I should say the reduction would be very considerable upon even that 8 per cent.; that is to say, allowing them to be serious fires, a larger amount of property would be saved.

1298. But is not this proportion of 8 per cent. of serious fires as favourable a result as, in your experience, is attained in other large cities?—I think it is as favourable a result as is attained in any other large cities.

1299. Do you think that any other large city could show so favourable a result as only 8 per cent. of serious fires?—Yes; I think some cities, which cannot be considered commercial cities, would show much more favourable results,

results, but there would be no comparison at all between them and London. Paris, for example, would show much more favourable results, but there is no great enterprise or merchandise there at all.

1300. Take a commercial city, Hamburg, for instance. Do you think Hamburg would show a better proportion than 8 per cent. of serious fires?—Yes, I think it would.

1301. Have you any means of showing that?—Yes, I think I have the means of showing that, but having had no notice I could not answer the question off-hand.

1302. Mr. *M'Lagan.*] Are not the houses practically fireproof in Paris?—The houses are practically fireproof for the purposes for which they are used, that is to say, as private dwellings.

1303. Sir *James Hogg.*] You have been asked some questions about turncocks being at the fire-brigade stations, The Metropolitan Board of Works have been blamed for not accepting the offers of the water companies. I think you stated that you would not approve of the turncocks being at the stations?—That I should. I should disapprove of their living under the roof, but not of their living in the neighbourhood of the stations. I think that would be very desirable.

1304. Supposing the Metropolitan Board of Works adopted the plan of having the turncocks living in the neighbourhood of the stations, it would be necessary to have two or three there, would it not?—Yes, and always to have one present.

1305. And it would be manifestly impossible to have accommodation for two or three turncocks?—As the stations are situated now, it would decidedly be so, because we have not room for our own men.

1306. Have you ever worked out the distance between the different fire stations?—Yes, I know every distance.

1307. Just take any typical case, so as to let us know how far the greatest distance would be?—I can answer any case. I have them all tabled. I calculated my time entirely by those distances, and the time for turning out.

1308. Take the B. district, what is the most distant point there from any fire brigade station?—About one mile I should say.

1309. That is the worst, is it?—Yes.

1310. Whereabouts is that?—That would be about one mile to the east of King's Cross. There is a spot somewhere about the Pentonville-road where they would be about one mile from a station.

1311. Is that a thickly populated district?—Yes, it is a thickly populated district; but there are others where it is not thickly populated, which are at a mile distance from a station.

1312. What is the worst case you have in the A. district?—The worst case in the A. district would probably be, taking population into account, the neighbourhood of Knightsbridge, and all that part.

1313. And what distance would that be from your station?—I am afraid it would be considerably over a mile.

1314. Is not there one close by there?—From Knightsbridge, the nearest points would be King-street, Golden-square; the top of Regent-street, or Westminster, or Brompton.

1315. Is not the Brompton station nearer than a mile?—No, it is somewhat over a mile.

1316. What is the worst case in the C. district?—The worst case, I think, we have in the C. district would probably be in the neighbourhood of Hackney Wick and Old Ford, and those parts.

1317. How far is that?—Over a mile.

1318. Then with regard to the D. district?—The D. district consists to a great extent of agricultural land, fields, scattered houses, and so on, but there are very great distances, undoubtedly, in the D. district. For instance, between our Wandsworth station and our Tooting station the distance is upwards of 2½ miles, making the intermediate part more than 1¼ from help.

1319. In those outlying districts the calls are not at all numerous, are they?—The calls are not at all frequent.

1320. So that although you mention some cases where the men have hard work, yet in those outlying districts the work is very light, is it not?—No, the work upon the men is very heavy, but the work at fires is light.

Captain *E. M. Shaw.*

4 May 1876.

1321. I think you have already told the Committee that the discipline of the force is entirely under you?—The entire discipline of the force is under me.

1322. Is it not the fact that, with very rare exceptions, all your recommendations as to promotions of the men, dismissal, or rewards, have been adopted by the committee and the Board?—Yes, promotions and dismissals too.

1323. I think you stated that you have generally sailors in the brigade?—We have altogether sailors; all the men taken within the last 12 or 15 years have been sailors.

1324. Have you found that those men have sometimes a great desire to go to sea, and that that is a reason for their relinquishing their engagements to the fire brigade?—I do not think I ever heard of a sailor on shore desiring to go to sea.

1325. An honourable Member wishes to know why you prefer sailors?—Because, with a very small amount of training, they become adapted to our work; their practice in climbing is so great that when they come on shore they are as comfortable on the top of a chimney or a wall as they are upon the ground, and they work as well upon a ladder as they do upon the ground.

1326. Would not bricklayers' labourers be useful recruits?—I do not think so; it is a wholly different line of business.

1327. Are they not employed in country towns?—They are employed in country towns, and they do very well for country towns.

1328. You think sailors are more applicable for London work?—I am quite sure of it.

1329. Does not that rather restrict your choice of men?—It does.

1330. Did you only employ sailors in the old fire brigade under the insurance companies?—I only employed sailors; sailors had been employed partially before I came into the brigade.

1331. You stated that in former days you heard that there were as many as 1,000 applicants upon the list?—I believe there were.

1332. Was not it the case that in former days every trade and every calling had plenty of applicants?—I do not know that; it was not the case to my knowledge.

1333. Do not you know that in former days labour was not so much sought after as it is now?—I am afraid I do not understand the question.

1334. I think you stated that you have very few applicants now?—Yes.

1335. Then I ask you does not the restriction to sailors make it more difficult to get them?—It does.

1336. Sailors are more difficult to get now than they were 10 or 12 years ago; is not that the case?—No; sailors are much more easy to get than they used to be. I do not think you quite understand the facts about recruiting. I have had within the last 10 years 640 men whom I have lost in addition to all those I have required for the keeping up of the force. I do not think it was ever so easy to get sailors as it is at this hour. I know of no case in my experience where a sailor cares to go on with his profession. Of course I do not say that without some reserve, but that may be taken to be the general view. Sailors prefer to serve on shore, and large numbers come to offer themselves to us.

1337. I thought you stated that very few came?—I stated that we had very few in comparison with our requirements; that is to say, we only get them one by one, and have a difficulty in filling our vacancies up.

1338. To go back to my old question, with regard to the Army and Navy, and all trades in which men are employed, is it not more difficult to get men now than it was 10 years ago?—I believe it is.

1339. The same cause which would apply to the Army and Navy would apply to the fire brigade, would it not?—I do not think so; I never got so many men as I get now.

1340. Then how is it that you complain?—I never complain about anything; but when I come to facts I am obliged to acknowledge that the drain upon our force from the men leaving is so vast that although there is an immense number of men coming in, and always has been, I cannot do anything more than just keep up to our strength. Sailors can be got in numbers, there is no doubt about that.

1341. I think

1341. I think you stated also that you recruit sailors up to the age of 35?—No; I recruit sailors now, at the present time, up to 30. My limit for to-day is 30 years. I have a printed paper for candidates, and there is one word omitted in that paper, and that is the extreme limit of age, which at present is at 30. We have had at times to extend that limit.

1342. Will you read that paper, showing the requirements of the candidates?—I will. "The chief officer of the Metropolitan Fire Brigade will see candidates for the situation of firemen in this brigade at the above station. Candidates for appointment as firemen must be seamen; they must be under the age of —— ; they must measure not less than 37 inches round the chest; and are generally preferred at least five feet five inches in height. They must be men of general intelligence, and able to read and write, and must also pass a medical inspection. Candidates must produce their certificates of birth and testimonials as to character, service, &c."

1343. Is it not the fact that notwithstanding the rate of wages paid to the men, in consequence of the knowledge they obtain after some considerable experience in the brigade, they become exceedingly valuable either to private parties wanting protection from fire, or in brigade establishments here or abroad?—Yes.

1344. And does not this cause make you lose a considerable number of men?—Yes, I think it does.

1345. I think you have given already your estimate of the cost of the suggested promotion of the men up to the first class at six years?—Including other changes.

1346. Could you give an estimate of what it would cost extra if your plan were adopted of allowing every man upon good conduct for two years to go up to the class above him?—I believe I have already given that.

1347. You stated 20,000 *l.* a year for the aggregate; but I want to know whether you have, with the present brigade, ever worked that out?—Not in that form exactly.

1348. *Chairman.*] I understood you to say that you only contemplated that upon the increase to the number of 200 being granted?—Quite so. I do not think we could alter our numbers in the ranks now without difficulty, but with the increase in the number of men it would come to about 50 per cent. increase on the existing wages account. There are many cases now in which we as a short-handed establishment have to put men in high positions to do the work which should be otherwise done by men in the humbler ranks.

1349. Sir *James Hogg.*] You were asked some questions with reference to hydrants; did not the Metropolitan Board of Works institute a series of experiments at Rotherhithe to see which was the best?—Yes, they did.

1350. And did they not go to Manchester as a committee, and to Liverpool also, for the purpose of testing and seeing what could be done?—Yes.

1351. Are you not aware that there has been an inquiry about the constant pressure system, and that it has been reported that it would be of no use whatever to put down hydrants under the existing system of water supply?—I do not think it went so far as to say that it would be of no use whatever, but I am aware that they have reported that it would be undesirable, under existing conditions, to put down hydrants to a large extent.

1352. The Board would be obliged to spend a very large sum of money in putting down hydrants, and still would be obliged to keep up a very expensive fire brigade?—I do not think that at present the fire brigade can be reduced through any number of hydrants which might be put down.

1353. With regard to the station at Wellclose-square being removed to the Commercial-road, do not you recollect that the Board addressed a letter to the Dock Company, and asked them whether they could give a site near the docks, to which they replied they were not able to do so?—I think that did happen.

1354. The Board were anxious, if possible, to place the station near the docks if they could?—Yes.

1355. And failing that they put it in the next best place in the Commercial-road?—Yes.

1356. The Commercial-road is a good wide road, is it not?—Yes; the present site of the central station is a good site for it.

1357. And that one central station is better than the two old small stations which were there before?—Yes, I think it is.

Captain *E. M. Shaw.*

4 May 1876.

1358. With regard to merit, you never have advocated, I believe, that the Board should give special rewards of money to the men?—I have never done so.

1359. But you told the Committee that you thought some recognition ought to be made. Will you tell the Committee what you would think desirable upon that subject?—A report upon that subject has been put in.

1360. There was a question which was put to you about a poor man of the name of Radford who got 16 *s.* a week after he had unfortunately lost his health; have you looked at all to see to what the police would get under similar circumstances, because I think you stated that you were told that the men in the police with a similar service would have got more. Now I have it here that a constable of a similar rank, after having subscribed every year of his service so much to the fund, would have only got 16 *s.*, and about $2\frac{1}{2}$ *d.* or 3 *d.*, whereas Radford got 16 *s.* having subscribed nothing?—I do not know what the parallel case might be in the police; that is one of the points upon which the men have informed me, and I believe they will be prepared to come forward and substantiate it. This question of the pensions is one with which I have only been very closely acquainted within the last week or so. The Board never were advised by me in their transactions upon this scheme; they conducted the negotiations themselves, and then they did not consult the men, therefore I am not in a position to answer those questions, though, of course, with a little notice I could prepare the answers.

1361. There was a question also with regard to a man named Ray, who I believe lost his leg riding back upon a horse after he had been out, and an omnibus ran against him?—Yes, that was the fact.

1362. Is it not the case that after the committee had sent the matter up, the Board sent it back to be reconsidered, and the committee went into the matter, and reported that the poor man had not been on duty riding the horse, and that they did not feel that they could consistently with their duty give him more?—That was their version of the case, but I never reported that the man was not on duty; on the contrary, I considered that he was, but the matter was looked into very closely.

Monday, 8th May 1876.

MEMBERS PRESENT:

Mr. Clifton.	Mr. Locke.
Mr. Forsyth.	Mr. M'Lagan.
Sir William Fraser.	Mr. Onslow.
Mr. Hankey.	Sir Henry Peek.
Mr. Hardcastle.	Mr. Ritchie.
Mr. John Stewart Hardy.	Sir Henry Selwin-Ibbetson.
Mr. Hayter.	Marquis of Tavistock.
Sir James Hogg.	Mr. Young.
Lord Lindsay.	

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

Captain *Eyre Massey Shaw*, re-called; and further Examined.

Captain *E. M. Shaw.*

3 May 1876.

1363. *Chairman.*] I UNDERSTAND you to say you wish upon the evidence of the last day also to make some corrections?—Yes, I desire to make corrections on one or two points, if the Committee will allow me.

1364. What is the first point on which you wish to make a correction?—Question No. 893. In reply to that question, I omitted to state my opinion that when the pension has reached its maximum, at 25 years or at 30 years, or at whatever other time as may be decided on, the contribution to the fund for the remaining years should cease; that is to say, after a man has attained the length of service which entitles him to full pension, inasmuch as by continuing to serve his pension does not increase any further, I think from the time at which his pension has ceased to increase the contribution to the pension fund should also cease.

1365. That is to say, that practically from the time a man reaches the limit to which the pension can extend, all transactions with regard to that pension fund should cease?—I think they should then cease.

1366. If a man remains in the service, when he leaves he will be entitled to take upon his leaving whatever he might have taken if he had left at the end of that term of years?—Precisely; but the correction which I wanted to make was rather in connection with the contribution on the men's part.

1367. That is what I meant by saying that all transactions with regard to the fund, whether contributions by the men or increases by the Board with regard to the ultimate pension, should cease?—Quite so. The other correction I wished to make is in regard to Question 987. In reply to that I said, "Practically the Board make no deductions except for rents and fines." That is in a certain sense correct as far as it goes, but it must be understood that the Board also makes deductions for superannuation, or savings; and in cases of suspension there is no payment at all upon the part of the Board, which, in a certain sense, amounts to the same thing as the deduction of the whole pay. I do not myself think this correction important, but the men wish it to be made, aud perhaps it may serve to prevent misapprehension upon the point.

1368. The deduction of the pay in the case of suspension is of the nature of a fine, is it not?—Not precisely, because there is no entry of pay at all in the pay sheets. In the case of a fine, the man's full pay is put down in the pay sheet, the fine put after it, and the net pay put down in the proper column as the money which he has to draw. In the case of suspension, there is no pay entered at all for the man.

Captain *E. M. Shaw.*

8 May 1876.

1369. Are you referring to suspension for misconduct?—Yes, I am.

1370. In certain instances of gross misconduct then, in point of fact, the Board look upon a deduction of the man's pay as the fine they impose for the man's suspension?—It comes to the same thing; but it is not returned in the list of fines.

1371. Mr. *John Hardy.*] If a man was suspended, and then it was found that he was not in any way to blame, would he receive the pay then?—Yes, but that is very seldom the case. When a man is re-instated he is continued on his pay, or if it is considered that he is not likely to be suspended.

1372. Sir *James Hogg.*] It is you who fine, I believe, and not the Board?—That is so.

1373. *Chairman.*] I imagine when you fine a man, you fine him under the authority the Board entrust to you?—Quite so. The last explanation I have to make is in connection with Question No. 1360. This is a question with regard to superannuation. Since that day the men have put in my hands a paper concerning the Metropolitan Police, from which it appears to be certain that the supposition of the honourable Member who asked the question, that Radford would have received only a few pence more than he has received if he had served the same time in the Metropolitan Police, was based upon information which was quite incorrect, and they point out that whoever advised the honourable Member in that matter, placed Radford's position on a par with that of a first-class constable in the Metropolitan Police. A chief inspector in the police, according to the paper shown to me, having the same amount of service as Radford had, would, on the completion of 15 years, be entitled to a pension equal to one-half of his pay, which would amount to 1 *l.* 17 *s.* 6 *d.* a week, and if, as Radford was, he was incapacitated by injuries received or caused by his duties, he would be allowed to retire on full pay, upon the recommendation of the Chief Commissioner.

1374. You would place him in the same rank as a chief ordinary inspector?—Quite so.

1375. And not a detective inspector?—The men say they quite acknowledge that a first-class constable would have received only about 15 *s.* a week, but that is a very different question.

1376. After 15 years, half-pension is granted to the police?—Yes.

1377. And a chief ordinary inspector annually receives an amount equal to 189 *l.* 16 *s.*, is not that so?—I am not prepared to answer that question, but I think it is about that.

1378. I have brought with me a table of the rates of pay of the Metropolitan Police, and the pensions and gratuities which they receive, which I can put in if the Committee wish, from which it appears that the chief ordinary inspectors' annual receipts are 189 *l.* 16 *s.*, or 3 *l.* 13 *s.* a week, and under the pension list under 15 years' service, as you have stated, he could be granted a pension of 30-50ths of the pay for each complete year of service?—Precisely. (*The Table was handed in.*)

1379. Mr. *Onslow.*] Your calculation appears to show that Radford's position is analogous to that of a chief inspector?—Yes. From the paper presented to me by the men I can see no case in which a man in that position could receive less than 1 *l.* 5 *s.* 6 *d.* a week, and even in that case he could be allowed, if incapacitated by injuries received on duty, to receive his whole pay on retirement on the recommendation of the Chief Commissioners. If the Committee have any doubts on that point in consequence of the mode in which the question was put to me, the men ask permission to be allowed to prove it by bringing up an inspector of the Metropolitan Police as a witness.

1380. *Chairman.*] The table I have put in would probably meet that difficulty, and the only question that could arise would be what rank Radford held in comparison with the Metropolitan Police?—Precisely.

1381. Sir *James Hogg.*] What rank did you put him at on that paper?—A chief inspector of police.

1382. What calculation is that made upon, because I am under the impression that a chief inspector of police gets a little more than Radford got?—Yes, a little more than Radford got.

1383. *Chairman.*]

1383. *Chairman.*] Are those all the corrections that you wish to make?—Yes, those are all the corrections that I wish to make. On one occasion I was asked to prepare a certain table of the number of fires during each year for a period of 10 years, and at the next meeting after that I was requested to prepare a daily summary of the fires for 10 years, a monthly summary, and a weekly summary; those tables I beg to hand in. (*The same were handed in.*)

1384. Before we leave the subject of the man Radford, I should like to ask upon what grounds you estimate his position as compared with the police?—Radford had for many years been in charge of a superintendent's station, and up to the time of his getting so seriously ill he was still in charge of that station, and I placed him in an ordinary station for the purpose of giving him such relief as would enable him to go back and resume his duties at the superintendent's station; he was only temporarily placed at the ordinary station.

1385. In reality his position was that of having charge of one of the principal stations?—Yes, and that had been his position for many years.

1386. And that you consider is analogous to the position of a chief inspector of police?—Precisely.

1387. Sir *James Hogg.*] Would you kindly inform the Committee upon what you based the estimate of 100 *l.* for every man who is drilled?—I think I explained on the last day that every man who comes has to undergo a period of instruction, during which time he draws pay. He has to be clothed, taught, housed, and looked after in every way, and for a considerable time he gives no return whatever for the expense. After a time he begins to give a little, and at about the end of a year he becomes a thoroughly useful man to us. At that time I consider he is no longer an encumbrance, but that he is paying his way.

1388. I only want to know the basis you go upon with regard to putting the amount at 100 *l.*, because there are cases in which men become efficient after three months, are there not?—Yes, there are cases in which men become very efficient after three months' service, but there are cases in which a man is not to be trusted by himself in the management of a fire for considerably over a year. I think as some amount must be named for this training, a 100 *l.* would about cover it, and I do not think that amount is too much. A trained soldier is supposed to be worth 100 *l.*, and a trained sailor is supposed to be worth 100 *l.*

1389. So you take it roughly that a trained fireman is worth about 100 *l.* too?—Yes, certainly; not less.

1390. Mr. *Hayter.*] Have you any estimate for successive years of the proportion of serious to slight fires?—Yes, I think evidence upon that point has already been given upon one occasion.

1391. At Question 120 you put the proportion of serious fires at 25 per cent., and slight fires at 75 per cent. in 1866; is it less now?—Yes, I think that question was answered in evidence the other day. The per-centage last year, 1875, was 11 serious, and 89 slight fires.

1392. If the number of stations were further multiplied, you anticipate, I presume, that there would be a still further reduction of serious fires?—Yes, I do.

1393. Because the speed with which you can arrive upon the ground is all-important with regard to preventing a fire which is slight from becoming serious?—Yes, that is very important.

1394. With regard to the pay of the men as compared with the police, I find that your first three classes receive 5 *s.*, 4 *s.* 6 *d.*, and 4 *s.* respectively per week more than the police?—That is the case.

1395. But the fourth class only receives 6 *d.* a week higher pay. A man in that class receives 1 *l.* 4 *s.* 6 *d.* against 1 *l.* 4 *s.*; is not that the case?—I did not know that there were any fourth-class policemen.

1396. But the pay of the lowest class in the police is 1 *l.* 4 *s.*, and your lowest class is 1 *l.* 4 *s.* 6 *d.*?—Yes, that is so.

1397. But it is your opinion, is it not, that a trained fireman is distinctly worth more than an ordinary policeman?—I should suppose that a trained fireman must be worth more than an ordinary policeman, as his training is more technical. I imagine that it would be easier to make a good policeman, and require less time, than to make a good fireman.

1398. Then would it not be best to omit the last class altogether, if there were

Captain *E. M. Shaw.*

8 May 1876.

were a re-arrangement, and then all the respective ranks would receive considerably more than the police?—I do not know that it would be necessary to do that. I think the present fourth class would do very well for a probationary class.

1399. But not for trained men?—No, not for trained men.

1400. Between what ages is a man, in your opinion, effective as a fireman; that is to say, what is the youngest age at which you ought to take him, and when should he be superannuated?—I should very much like to be able to get men at 17, but I am quite willing to take men up to 23, 24, or 25, if necessary. As a rule, I should not wish to go beyond 25 years, although I am, as a matter of fact, going beyond that at the present moment.

1401. Sir *Henry Peek.*] Thirty years is your present limit, is it not?—Yes; but I am not strictly limited to 30 years. I am taking a man this day who is a little over 30.

1402. Mr. *Hayter.*] After what age would you wish to superannuate a man, for no special reason, but merely from age?—I do not think that a limit of age ought to be taken at all. There are, no doubt, many men who would be able to work at their business until they were 55 or 60, and we know instances of that; therefore I do not think it is desirable to name a limit of age beyond which a man should no longer serve. I should name a limit of service. If a man had served 30 years in the fire brigade, I think he ought to receive his discharge, or at least be entitled to it.

1403. Lord *Lindsay.*] You would not force a man to retire under such circumstances?—No, I would not; I would rather encourage him to remain in the force, if he were an effective man.

1404. Mr. *Hayter.*] Do you think that it would be a good plan, as has been adopted by the St. George's Vestry, to advertise the name and address of the turncock on the street lamps?—Yes, I think it is a very good plan; it may help us a little, but we do not know that it does so, because we have all the names of the turncocks in our stations.

1405. The general public become acquainted with the name and address of the turncock, and would assist the policeman who gave the alarm probably?—No doubt; but I think it would be a very good thing to do.

1406. That was adopted by the St. George's Vestry after the Grosvenor Mews fire, was it not?—Yes, I believe it was.

1407. It is universal in their district, is it not?—It is.

1408. Are the police going on their beats warned by the serjeant who parades them with reference to the nearest fire-escape and fire station, and the address of the turncock?—They all know the address of the turncock, but I do not know the form by which the police are instructed.

1409. As a matter of course the police know the stations and escapes?—They know them thoroughly well.

1410. Mr. *John Hardy.*] I wish to ask you one or two questions with regard to the water supply. You say your requirements would be 2,000 gallons a minute for 14 engines. Have you entered into a calculation with reference to what the cost of providing for those requirements would be?—No, I have not.

1411. If it appears that the cost throughout London would amount to some millions of money, do you think that the present want of water is so great at fires that it would justify that expense being put upon any persons whatever?—That is a question of general policy which I am hardly able to answer; but my own view of the matter is that I think the requirement which I have put in is an exceedingly small requirement, and ought to be met in some way; but, of course, it is not for me to say who is to pay for it, and I really do not know.

1412. You say that last year you had only four cases of short supply of water. That amounted to about a quarter per cent. of the whole fires of the metropolis?—Yes.

1413. And supposing that the supply of water in those cases had been efficient, what amount of property do you suppose would have been saved in a year by that?—I cannot say.

1414. No large amount?—No; last year was a favourable year in that way, and I do not think it would have made much difference in the proportion.

1415. Supposing

1415. Supposing such a requirement as yours would cost some millions of money, do not you think that a comparatively small sum expended in making the fire brigade more efficient would be more advantageous than making that very large outlay?—No, I do not think so. I certainly think that there should be 2,000 gallons a minute available within easy reach in all parts of London.

1416. Even if that cost 100,000 *l.* a year to get it?—I cannot answer any question with regard to the cost of it. I do not think it would cost anything like that.

1417. You stated that there had been certain cases of short supply, especially in Bermondsey and Rotherhithe. Now, is it not the fact that Bermondsey and Rotherhithe are districts under the constant supply system?—There are parts of the district under the constant supply system.

1418. With regard to the turncock living at the station, the honourable Chairman of the Committee said that if the turncock were resident at the station he might be, very probably, engaged elsewhere upon his duties at the time a fire took place; but is it not also the fact that a very large majority of the fires take place at hours at which the turncocks have no duties especially to perform?—I do not know the hours of a turncock's duties.

1419. Are you aware that large owners of property can have sealed cocks directly from the main into their property, with a constant supply from the main, by a very small payment to the different water companies?—I know nothing about the payment, but I have always heard that owners of property could have such protection if they chose to pay for it.

1420. Do not you think that it is desirable in all cases of a large amount of property that the owners should avail themselves of that protection?—Certainly it would be most desirable.

1421. *Chairman.*] Could that privilege be made use of unless a constant supply were in existence?—I do not see why it should not, but it must be brought from the nearest point of constant supply.

1422. Mr. *Hardcastle.*] You stated at Question 1037 that between 1868 and 1875, 1,197 persons lives were endangered, of whom 957 had been saved, and 240 lost, and that you included in that number of persons said to have been endangered, children who were found burnt to death in their rooms when locked up by their mothers, and also cases heard of through the newspapers. I wished to ask whether you had any idea what proportion of those persons were saved by means of the fire-escape?—I think you asked the same question upon the last occasion, and I was not able to answer it. I am not very well able to answer it now, although I have no doubt I could get the figure if it were important. Of the total number of cases, there were 421 in which our men were specially commended for merit, and of course in all those cases the lives were undoubtedly saved by men in charge of the fire-escape, but there are many other cases in which lives were also saved by the fire-escape men, but in which I did not consider there was any very special merit sufficient to justify me in bringing the cases forward for special notice.

1423. That would justify you perhaps in saying that about half the cases were really saved by the firemen?—I should say that in one way or another a great many more than half were saved by the firemen, because there are 421 cases of special merit, and there were certainly at least 200, and perhaps more cases, in which there was perhaps mere ordinary merit.

1424. Then I wish to ask you a question with regard to the protection afforded by the fire brigade to the docks; I understood you to say that that was exceptionally great, and that the docks were more efficiently protected than other parts of London; was I correct in so understanding you?—I do not know that I put it exactly in that way; there is a good deal of protection about the docks, certainly.

1425. Sir *James Hogg.*] The docks have got watchmen, have they not?—Yes, they have watchmen of their own. I think that as far as our force goes, we have distributed it in such a way as to give the docks at least their fair share of protection.

1426. You do not think you give them more than their share?—I do not think so.

1427. Mr. *M'Lagan.*] You have a larger force at the docks than you estimated for at first, have you not?—No, I do not think we have, but we have not less.

Captain *E. M. Shaw.*

8 May 1876.

1428. When the fire-engines were under the superintendents of the insurance offices, will you state what was the principal area upon which those fire-engines were placed?—They were placed within an area (I think this has been already in evidence) of about five miles in length from east to west, and about two miles in depth from north to south.

1429. In what part of the City was that?—That included the City as far as Ratcliff Highway, and it included the West End as far as Baker-street.

1430. North and south of Waterloo Bridge?—North and south the area included from Whitecross-street and those parts to Southwark Bridge-road and that neighbourhood.

1431. And you say that contained the most valuable part of the property of the metropolis; it included all the Manchester warehouses, the docks, and the warehouses about the docks, and all the warehouses and the printing offices of the newspapers?—Yes; I should suppose the property in that part, roughly speaking, would amount to nearly two-thirds in value of the whole of the property of London.

1432. And I think you stated that you had then eight stations in that area?—We had 17 stations.

1433. Have you reduced the number of stations there from 17?—Yes; the number of stations within the actual limit of that area is reduced, but the protection to that area is not reduced.

1434. That is to say, I presume, that you have the same number of men employed?—We have a greater number of men available for the protection of the district, though not absolutely stationed within the limits of the district.

1435. When you reduced the number of stations, was there any remonstrance made by the insurance companies against the reduction of the number?—I am not quite able to answer that question; I think the Board will be able to answer it better than I can.

1436. You have at the present time so many floating engines as well as land engines?—Yes.

1437. You remember the fire which took place in the King and Queen warehouses, I think in 1873, in Rotherhithe?—Yes; I remember that fire very well.

1438. At that fire there was about 200,000 *l.* worth of property destroyed, was there not?—I never heard the value; it must have been very large.

1439. Was the floating steam engine you had then of much service to you?—Decidedly it was.

1440. Would it not have been better if you had had several small engines instead of one large one?—On that occasion it would not.

1441. Were you perfectly satisfied with the work that engine did?—Yes, on that occasion.

1442. Are you always satisfied with the work of that engine?—As a general rule I am.

1443. Is not the engine very large in bulk and unable to approach so close to the fires as you could wish?—Our difficulties have not been in connection with the engine, but in connection with the shore, namely, the difficulty of passing over the mud.

1444. Do not you think it would be better to have several little handy engines instead of that large one?—Certainly not, putting it as a matter of comparison; but I think it would be very desirable to have some small engines, and the subject is now under the consideration of the Metropolitan Board of Works.

1445. The subject, I believe, has been brought before the consideration of the Metropolitan Board of Works with reference to the necessity of having several of those small engines?—Yes; the subject has been brought before the Board.

1446. The Board have always declined to have them, have they not?—I do not know that they have declined. The question is still under consideration.

1447. And it has been under consideration since 1873?—Yes, the subject has been under consideration since that time.

1448. Sir *James Hogg*.] Is it not the fact that plans are drawn up and estimates made and laid before the committee?—Yes, the plans are drawn up now.

1449. Mr. *M'Lagan.*] But the matter has not got any further than the drawing up of the plans?—As yet it has not got further than the drawing up of the plans.

1450. When were the plans drawn up?—I am not quite able to say. That will be found in the books of the committee. Some considerable time since.

1451. There has been a considerable extension of the contribution from the insurance companies since 1866 to the fire brigade, has there not?—I believe there has.

1452. Do you know what the contribution was in 1866?—I am not very well able to give evidence upon this point. I do not quite know, but I believe the contribution was a little over 10,000 *l.*, and I believe it is over 18,000 *l.* now, but all that will be found very accurately given in the books of the committee.

1453. As a matter of principle, do you think it is right to tax a commercial company to perform duties such as these; I am not asking you as a professional man, but as a man of common sense?—I never thought it right to tax insurance companies, unless the whole of the population is bound to insure every particle of property. I am quite aware that that is the injustice of it.

1454. Have the insurance companies made any representation at all to the Fire Brigade Committee?—No, none at all that I know of.

1455. Have they had no voice whatever in the spending of the money which they contribute?—None whatever.

1456. In fact they are like a lamb which is to be skinned and eaten without being consulted as to how it should be cooked?—I do not see how the fire insurance companies can have any voice in the management of a fund to which they only contribute so small a proportion.

1457. Is not that contrary to all principle of justice in this country, the accepted principle being that where there is taxation there should be representation?—I am unable to answer that question.

1458. Have you any ideas, perhaps you have paid attention to the question, of the proportion paid by those insurance companies as compared with that paid by the general public?—I am not very well able to say. I presume they pay about one-third of the amount paid by the general public.

1459. The assessment paid by the public is based upon the rental of the property, as I understand, and the contribution paid by the insurance companies is fixed upon the premiums which they receive; in the one case is it not the fact that the public only pay a halfpenny in the pound, while the insurance companies pay something like 5 *d.* in the pound?—The contribution is not based upon the premiums at all; the contribution is based upon the number of millions insured; the insurance companies pay 35 *l.* per million upon the gross sum insured per annum, but if you will allow me to say so, I think any question bearing upon general policy, and bearing upon finance, will be much more accurately answered by other witnesses than I can answer them, as it is not part of my duty to go into those matters.

1460. Can you tell me what the number of fires in 1866 was?—One thousand three hundred and thirty-eight.

1461. And the number of fires whose causes were unknown?—Five hundred and eighty-nine.

1462. The proportion of that would be about 44 per cent. as near as can be?—Yes.

1463. Can you tell me the number of fires in 1875?—One thousand five hundred and twenty-nine.

1464. And the number of fires whose causes were unknown?—Three hundred and seven.

1465. The per-centage of that would be about 20, I believe?—Yes, it would.

1466. Consequently we have a reduction in the number of fires whose causes were unknown from 1866 to 1875 of about 24 per cent.?—Yes

1467. Will you tell the Committee to what you attribute that great reduction in the number of fires, whose causes were unknown?—I can hardly answer that question. I think we are getting more experienced in ascertaining the causes of fires.

1468. Your force is more efficient, and your organisation is better, I have no doubt?

Captain *E. M. Shaw.*

8 May 1876.

doubt?—I think we have better means now. I think the public are more frank with us in telling us the causes than they were.

1469. What was the cause of there being that reduction in the fires whose causes were unknown; is it not that you are sooner upon the spot, and able to discover the causes sooner now than you were in 1866?—Certainly we are there sooner, and I presume that that assists in enabling us to ascertain the causes, but I do not think that that is the only reason.

1470. What means do you take for ascertaining the causes of fires; do you procure evidence from the general public?—An experienced officer goes round and makes every possible inquiry upon the spot; the police and the public help us, and all the neighbours help us, and, as it will be observed from the reports which I have put in, we, as a rule, get the causes correctly.

1471. You stated that the public occasionally have suspicions with reference to the causes of fires; are those suspicions put down as facts?—They are never put down without close examination; it is very rare indeed for a fire to happen in which we do not receive a very large number of suggestions with reference to the probable cause, and we have to judge for ourselves which is the most probable cause.

1472. All we have found out is that there is a considerable reduction in the number of serious fires since 1866, and also a reduction in the number of fires whose causes were unknown. The conclusion I am led to is this, that there is less necessity for any increase of the fire brigade now than there was in 1866; am I right in that conclusion?—You are quite right; there has been a large increase made since 1866, and, of course, there is very much less need of an increase now than there was then; at that time the increase was very urgently needed.

1473. What has been the increase made since 1866?—In 1866 there were 17 land stations; now there are 49. In 1866 there were two floating stations; now there are four. In 1866 there were 131 men; at the present moment there are 398 men.

1474. But that number includes the fire-escape men, does it not?—Yes; that number includes the fire-escape men.

1475. Of whom the number is 130?—Yes.

1476. But that increase alone will not account entirely, considering the great increase of the population, the increase in the number of houses, and the extension of London generally, for the diminution in the number of fires whose causes are unknown?—No, it will not; I think the diminution may be attributed to the public being more frank with us than they ever were.

1477. I was going to compliment you and the brigade, by saying that I thought your force was far more efficient now than it was then?—It undoubtedly is so.

1478. And that you are more active now than you were then; I do not think we are more active now than we were then; I think we were very active in those days.

1479. Seeing then that we have a tolerably efficient fire brigade at the present time, I suppose you will agree with me that "it is better to bear the evils that we have than fly to others we know not of," and that instead of taxing the ratepayers for such a large increase as you propose, we should try by every means in our power to see if we cannot utilise the present fire brigade better than it is at present utilised?—I think it would be well spent money to incur the expense which I have suggested.

1480. Will you answer the question whether you would agree with me in that general principle?—As a rule, I do, but you did not quite put it to me in the sense in which I can say I exactly agree; the first thing I think we should do would be to keep those men who are efficient. I desire particularly to keep the men that I have got now, and to stop this heavy drain which has been going on.

1481. You think it would be better to keep the men you have now than to increase their number; is that so?—I think it is absolutely necessary to increase the number also; I regard four things as necessary; I consider the first requisite is to establish a superannuation and pension scheme; I consider the second is to increase the number in order to give the men a certain relief; I think the third is to re-arrange the numbers of the different ranks in the force; and last of all, I now put what 10 years ago was my very first point, namely, the establishment of a proper head quarters station as a base of operations.

1482. You

1482. You would put in front a superannuation scheme as the first of your reforms?—Yes, there can be no doubt upon that point.

1483. Are you aware of the fact that many people object to the principle of superannuation?—Yes, I have heard people object to it, but I do not know that there are many who do; I have certainly heard individuals object to it.

1484. If you look through the Reports of the Parliamentary proceedings you will find that there is no payment introduced into Parliament which is not stoutly resisted by certain parties?—I have seen that.

1485. And you will admit also that there are great abuses possible in a superannuation scheme?—Yes, perhaps there are.

1486. And although a superannuation scheme has its advantages, it has its abuses?—No doubt.

1487. I presume the scheme which you have laid before the Committee, and as proposed by the men, contains the provision that they should contribute out of their weekly wages the full amount to the superannuation fund?—The men do not propose that; that would make the fund simply a club fund contributed by themselves, and they have not proposed that.

1488. But a proportion of their weekly wages?—The men have proposed to contribute a proportion.

1489. Would it not be better to pay the men well and let them form a superannuation fund themselves, than to form such a superannuation scheme as you advocate?—No; my opinion is directly against that; I do not think that would be so good.

1490. What objection would you have to that scheme?—I think the principle of deferred pay for such men is a decidedly wise one, and I think if the scheme were all worked by themselves it would not take the form of deferred pay.

1491. You say you complain of the men's wages not being high enough now; if I understand you rightly, they are not equal in pay to the police officers, and you think they should be?—There are some of our members whose pay I think is not sufficient, but I think the pay of the four classes of firemen is sufficient to keep them in the service, if only we give them a proper movement forward; I think the present pay, with the present stagnation, is not sufficient, but that when there is a steady flow of promotion always going on, and the men are not kept too long in the lower ranks, the present pay will be sufficient to enable me to get the class of men I require.

1492. You would not approve of a scheme by which the men's wages were to be increased to a considerable extent, they being required to refund a certain portion of their wages to form a superannuation fund?—I do not approve of any scheme which proposes to increase the wages of the men without providing for a superannuation fund. I am not quite sure that I understand the question as it has been put. If you ask me whether I approve of the men's wages being increased, and the men being compelled to contribute to a club, I consider that the same thing as a superannuation fund, provided it is understood that the men cannot draw upon that fund until they leave the force.

1493. The men could contribute to a club, or some insurance society, instead of making the Metropolitan Board of Works their bankers of the reserve fund?—I do not see that that point is very important, but I think I should prefer to see the money vested in the hands of their employers.

1494. Do you not think that sometimes that might lead to abuse, as compared to the funds being put into the hands of some company, or some club; that sympathy and pity would often be excited, and that the ratepayers would have to pay more than was really due to the men?—I think it would be one of the great advantages of having the money in the hands of their employers that there might be an opportunity for sympathy in cases in which sympathy was very much deserved.

1495. I am speaking now principally of men being thrown off duty from illness or accident, not of good service pensions, which would be left entirely in the hands of the employers?—I think there are many cases in which the men are entitled to great sympathy, and certainly some men would be entitled to larger allowances than others, and I think the funds would be better managed in the hands of the employers than they would be in the hands of a committee of a club formed by the men themselves. What I am driving at would be simply like

Captain *E. M. Shaw.*

8 May 1876.

like an insurance of one's life?—I do not think the point very important. I do not think it would make very much difference to the men or to the officials working the institution, whether the funds were in the hands of a public company or of the Board itself. The only argument against the fund being placed in the hands of a public company would be that there would exist no power of showing sympathy in cases in which sympathy was very much called for.

1496. It would be left to the employers to give gratuities, I assume?—If the employers were also to give gratuities there would be two funds.

1497. The one managed by a public company, and the other by the Board?—No, I say the gratuity would come out of public funds.

1498. Mr. *Hardcastle*] Do I understand you correctly that the superannuation fund which you propose to establish, is not to be upon a fixed general principle of pensions given to the men, but to be an expansive fund, which may be influenced by the sympathy of the managers?—No, that was not the intention of my answer. What I wished to say was that, in case of superannuation, the fund could be equally well managed by a public company as by the Board of Works; and in that case it would be of no importance in whose hands the money was vested, but in the case of gratuities it would be exceedingly important, for if it was in the hands of a public company they would have to move on fixed instructions, and would not be able to make allowance for cases in which extreme sympathy was absolutely required.

1499. Is the system which you recommend to be of the second character which you have prescribed, that is to say, not to be upon the fixed, but upon the discretionary principle?—The gratuities would be upon the discretionary principle, each case being taken upon its own merits, as it really must be.

1500. The gratuities would be distinct from the pensions, would they not?—Yes.

1501. *Chairman.*] You would recommend a superannuation scheme similar to that existing in other forces in which gratuities form a part of the medical certificate pensions, whereas a superannuation scheme is based on the length of service?—Precisely.

1502. Mr. *M'Lagan.*] Did I understand you to state that upon the recommendation of the superintendent, a man may receive a pension after having served a certain time?—I was speaking then of the Metropolitan Police. I was speaking of the comparison between our men and the men of the Metropolitan Police.

1503. *Chairman.*] That section of the Metropolitan Police scale is Section 4: "Injuries received in the execution of duty, wholly incapaciting, to be specially considered, but pensions in no case to exceed full pay." That refers to the cases in which men are wholly incapacitated, but which are subject to the recommendation and approval of the Chief Commissioner?—That is the one from which I quoted.

1504. Mr. *M'Lagan.*] But suppose an able-bodied man had served the number of years that he ought to have served to entitle him to receive a pension, and wished to retire, would he be allowed to retire simply if he received a certificate from the superintendent, if his time were up?—That is a point which remains for arrangement yet; but it was proposed by the Board that a man should have the power of retiring at the end of 35 years without a certificate, if he had attained the age of 60. The men have objected to the length of service, and have also objected to the age of 60 years.

1505. I do not think that in any of the schemes you proposed you alluded at all to the opinion of a medical officer being taken with reference to the efficiency of a man, the state of his health, and his bodily strength?—Yes, I did; that is taken into account. The Board name two periods of years, 30 and 35 years, and then the men named periods of service upon the same principle, but altering the time to 25 and 30 years. After 25 years, according to the men's proposal, and after 30 years, according to the Board's proposal, a man could claim his pension upon the certificate of the surgeon to the effect that he was unfit for further service; but after the longer period in both cases a man could claim a pension without a surgeon's certificate, but in the latter case, according to the Board's proposal, he should have attained the age of 60 years, which the men object to.

1506. You have stated the term of 60 years. Is not that the age generally adopted

adopted throughout the country as the age of retirement from different professions?—I cannot say.

1507. *Chairman.*] It is the age at present in the county and borough police forces?—But there is no parallel between them and us in point of work.

1508. Mr. *M'Lagan.*] I suppose your men require to be far more active than the police are?—That is so. When I say our men are more active, of course I do not mean to impute any want of activity to the police, I only mean to say that there is a certain amount of physical activity required for our work which men of advanced age are not capable of affording.

1509. I was saying it was better if we could utilise the police force than to increase the fire brigade, and of course increase the rates. Would you suggest any way to the Committee by which the police force could be utilised to assist the fire brigade?—I do not think that I could go further than what I said on the last occasion. If the police authorities would allow us to place appliances in some of the police stations in London, and if they would connect their stations with us by telegraph, and give us the services of their men during the time of a fire burning, I think a vast deal might be done by conjunction with the police, but I am quite aware of the difficulties in the way of doing that.

1510. What work would you allot to the police?—The pulling out of the hose, and laying it down.

1511. Do you not think it would prove an advantage if the police upon their beat always knew where the turncock was, and were always supplied with the key, so that they could get the water ready?—I believe the police always know where the turncock lives.

1512. But do you not think it would be better that the police should be supplied with the appliances so that they could turn on the water?—I do not think that makes any difference, because if the water is there it can be turned on instantly by our own men.

1513. Has the Salvage Corps been of any service to you at all?—Yes, indirectly it has.

1514. Do not you think that they are the means of preventing fires very often?—I know of no case in which they could prevent a fire at all.

1515. Is it not the case that the Salvage Corps men are going about the docks every now and then looking about to see if there is anything that might be a cause of fire?—Yes, I believe that where there are large insurances the men are allowed to go in and look over the place.

1516. And that in that way they have often prevented a fire?—I never heard of their preventing a fire; but I dare say they claim to do so, and possibly have done so.

1517. In the case of the docks, have there not been a number of additional appliances made use of at the docks for extinguishing fires since 1866?—Yes, a great many.

1518. That might account for there not being so many fires as there would otherwise have been?—I am not quite sure whether there were many additions made since 1866, if that was the exact wording of the question; but they have in all the docks some arrangements of their own.

1519. Have they not cocks put in; and is it not the fact that the Salvage Corps do visit the docks oftener than they did?—I am not able to answer the question; I have no doubt they do.

1520. In all those particulars, though not done at the public expense, they are in a measure precluding the necessity for such a large increase of the fire brigade as you suggested, seeing that they are the means of preventing fires?—I do not know how they can prevent fire, except, perhaps, that their watchfulness may make other people watchful.

1521. Do the Salvage Corps assist the fire brigade in the performance of their duties, either at fires or otherwise?—No, not in any way. They would be quite ready to do so, no doubt; but there has been no case in which they have. They have lent a hand occasionally, but that is all.

1522. You have never asked for their assistance?—No, but they are perfectly ready to give it; and probably they rather anticipate my wishes than wait to be asked. If it is intended to ask whether the Salvage Corps relieve us of any of those fixed duties which are so onerous, the answer is absolutely in the negative. They cannot in any way relieve us of those fixed duties which are working our men so hard.

 1523. All

Captain *E. M. Shaw.*

8 May 1876.

1523. All I meant to put to you was, that the establishment of the Salvage Corps has had some effect in preventing fires; is that your opinion?—I am not aware that it has, but it may have.

1524. I concluded from that that there would be less necessity for extending the fire brigade if you had any body for preventing fire?—If you had any body for preventing fire there would be less necessity for increasing the fire brigade; but I do not think it is possible that they can have done anything in that way, except upon a very small scale.

1525. Do you know how many men there are in the Salvage Corps?—I do not.

1526. Mr. *Hardcastle.*] With regard to the special protection afforded to the docks, the question I wish to refer you is No. 1124. The question was asked: "Was there an understanding by the insurance companies, when they were required by the Act of 1865 to contribute towards the expenses of the fire brigade, that the requirements for the protection of property against fire in the neighbourhood of the docks should be specially considered, as they had been previously to the passing of the Act?" To which you replied that you were not able to speak to it; and then, the question being repeated, "If there were any understanding of that kind, has it been practically carried out?" you replied: "I think the protection to the docks is now greater than it ever was." I inferred from that that the protection to the docks having, previously to the passing of that Act, been specially considered, and the protection now being greater than it ever was before, the protection to the docks must be *à fortiori* greater than the protection to property in other parts of the metropolis. Is that a fair inference?—Yes; the protection to that part of London I think is better, and of course the docks come in for their share of additional protection.

1527. I presume the reason for that special protection is the great value of the property stored in the dock warehouses?—Yes, and in the neighbourhood of the docks.

1528. You were then asked by the honourable Member for Linlithgowshire whether it was not unfair that commercial companies (I presume that refers to insurance companies) should be exceptionally taxed in aid of the general expense of the fire brigade, and you answered, "Clearly." I wish, therefore, to ask whether, as a matter of fact, this part of the metropolis in which these commercial companies are specially interested, by reason of their heavy insurances upon the value of property there stored, is not, as a matter of fact, exceptionally and specially protected at this time?—No, I cannot say that it is. There has been a large amount of additional protection afforded to the metropolis, and the docks have had, I think, their full share of that protection. I do not think they are exceptionally protected.

1529. But you said "specially protected"?—One of our stations is very near the docks; in fact, more than one. We have a station not far from the west end of the London Docks and the St. Katherine's Docks, and we have a station near the east end of the London Docks.

1530. You stated that the docks were specially considered before the passing of the Act of 1865, and you say that the protection to the docks is now greater than ever it was?—I think that is the case.

1531. Is there any special protection to the docks?—There is no special protection in the sense of being for the docks alone. The district in the neighbourhood of the docks is now protected by additional men and engines, which they considered themselves entitled to under the increased state of the brigade. The additional protection since 1866, chiefly consists in having stations not very far from the stations which existed there before, and those additional stations are able to send in help much more rapidly than they could get it in former times.

1532. Do you think that they consider themselves entitled to that protection in consequence of the additional 10,000 *l.* a year which they pay?—The docks themselves pay nothing.

1533. I am speaking of the insurance companies?—I do not know their views about the matter.

1534. *Chairman.*] What I inferred from your answer, on your first examination, was the comparative protection to the docks was an increase on the old protection, but was not a special protection as against the increased protection given to other districts?—That was precisely the intention of my answer.

1535. Mr.

1535. Mr. *Hardcastle.*] Have not the insurance companies practically a *quid pro quo* for their increased contribution in the shape of the greater share of protection afforded to that neighbourhood, in consequence of the greater value of the property in the neighbourhood?—If the intention of the honourable Member is to ask whether the whole of that contribution has been spent in that neighbourhood, of course there can be but one answer, that it has not been spent there, but a proportion of it has been.

1536. I did not imply that the whole was necessarily spent there, but that in point of fact the interest which the metropolitan insurance companies had in the property insured was a reason why they made this payment, and that the protection was, as I was led to infer from Mr. Ritchie's question, specially great in that neighbourhood; if you say it is not then that satisfies me?—No, the money has been spent all over the metropolis, as I think it ought to have been spent; I believe the docks have had their fair share of additional protection, but they certainly have not had the whole of the additional protection.

1537. I did not say that there was any distinction made in the expenditure of the fund, but what I said was that that part of the metropolis was the part of the metropolis in which, owing to the value of the property in it, the insurance companies were specially interested, and that that part of the metropolis had a special measure of protection afforded?—My answers were never intended to convey that exact idea; there are stations about the docks, and they have their fair share of the existing force.

1538. Mr. *Young.*] You have often been in the chair, I think, under examination respecting fires in the metropolis?—I have been several times examined.

1539. You remember that you were examined in 1862?—I was examined in 1862.

1540. And likewise in 1867?—Yes.

1541. Referring to that, I find that you were asked before the Fire Protection Committee, which sat in 1862, at Question 578: "Since you have been in London have you experienced any want of water?" and you say: "Twice, I think, in about 600 fires." Is that correct?—Yes.

1542. Then in 1867, in Question 3452, you were asked a general question at the end of your examination, upon the pressure of water, and so on; in reply to which you say: "I do not think that there is anything in any Act of Parliament which I have seen which really binds the companies to do very much for the public; as a matter of fact they do so; the efforts they have made to meet the public emergencies have been amazing. They have spent money, and done everything which they possibly could do to supply a sufficient quantity of water whenever a fire occurs." You were speaking of the metropolitan water companies. Is it your opinion that they have, up to the present time, done all that they could in the same manner as you expressed your opinion that they had in 1867?—Yes, clearly so.

1543. In the Committee of 1867, which is called, I think, Mr. Ayrton's Committee, did you hear Mr. Bateman's evidence. It was the East London Water Company which had a Bill before Parliament, which was referred to a Committee?—I was examined on that Committee.

1544. Do you remember Mr. Bateman's evidence?—I think I remember it.

1545. Adverting to the plug-system as contra-distinguished from the hydrant system, at Question 2566 he is asked, "What is your opinion of that system;" and his answer was, "It is a disgrace to our profession; it is a disgrace to the mechanical ingenuity of the age that it should be allowed to exist; nothing ever was so bad as the old wooden plug;" do you recollect that answer?—Yes; I was not present when that evidence was given, but I remember that answer, and the bearing of it very well.

1546. You were subsequently examined on that Committee; I will refer you to Question No. 3235; I read your answer as very much agreeing with Mr. Bateman's evidence, that the wooden plug was an old-fashioned and a very inefficient instrument to use; am I right in thinking that that was your opinion?—Quite so.

1547. I think you use the phrase, "The present fire-plugs are perhaps the worst to be found in any city in the world;" that is at Question No. 3238?—That is so.

Captain *E. M. Shaw.*

8 May 1876.

1548. I will not multiply the questions upon that; your evidence very much concurred with Mr. Bateman's?—That was not in the form of a reply to a question there. I think it was an extract from a report which I had previously made to the Metropolitan Board of Works upon the subject.

1549. As long as that is your opinion that is all that I want; then in this year when you were in the chair the other day, upon the 27th April, at Question No. 179, as far as I read your answer there, you have modified your opinion somewhat as respects the relative values of plugs and hydrants, have you not?—No, I never offered an opinion before this Committee upon the relative values of what are called plugs and hydrants. I was merely speaking of the terms used.

1550. I do not understand you to wish the Committee to understand that you are not fully alive to the difference in value of plugs and hydrants?—If there could be some definition laid down, I would say that the wooden plugs are exceedingly bad, and any mechanical arrangement for getting access to the water would be very much better than that.

1551. Are you not of opinion that if hydrants were put down upon mains that are constantly charged as freely as possible, they would to a great extent be a very superior force for putting out fires than the present arrangement?—Yes, if there are sufficient mains.

1552. But *pro tanto* to any extent that there are mains, would you not wish that hydrants should be applied?—Certainly, as far as I am concerned professionally, I should very much like to see a hydrant placed upon every main which is charged, but at the same time my answer went to say that I really did not consider it would be, at the present moment, very desirable to put down hydrants all over London in consequence of the very large number of districts still under intermittent supply.

1553. Mr. *John Hardy.*] But with regard to that, surely mains run through the districts of intermittent supply just as much as through others?—Yes, but the parts of any given district in which we could avail ourselves of the use of the hydrants would be very small in comparison with the whole of the district.

1554. Mr. *Young.*] Are there not mains, though not through every street, yet through all the large streets?—Yes, there are many large streets with mains.

1555. And some of them with more than one main?—Yes, some of the streets have more than one main.

1556. Do not you think that wherever there is a main, a hydrant is a superior thing for your purpose?—There can be no doubt that the hydrant in all cases is a superior thing for our purpose; but then there is the other question of general policy, in which I certainly so far agree with my Board that I do not think that it would pay to put down hydrants where there are large districts still under intermittent supply.

1557. In 1867, when the Committee was sitting, I think it appeared that in the East London district there were 35,000 houses under constant supply?—I do not remember that that was stated, but it might have been.

1558. Do you know, as a fact, that there are a great many more now in the East London district than there were in 1867?—I am quite sure that there are; the district of constant supply has very largely increased.

1559. That constant supply is upon a concentrated district, is it not?—It is a large district.

1560. And the water companies have gone on gradually in that particular district continuing to give a constant supply?—Yes. I do not think there is anything like the number of houses in the East London districts, within our limits, which you have stated.

1561. And that there are now 25,000 more houses under that supply?—That may be so.

1562. Taking that district alone, where there is a constant supply, say to 40,000 houses, are you of opinion that it would be advantageous to have hydrants placed there as freely as possible?—Yes, speaking as a fireman alone, I think so, but serving under the Board, and knowing their views on the matter, I really must express my agreement with their decision upon that point at present.

1563. I think, in your evidence, you stated that you wanted a pressure equal to 300 feet?—I have not stated that before this Committee.

1564. Is

1564. Is that what you would like?—I think that would be a good pressure for the general use of London.

1565. Would not that pressure be very much higher than you have for the greater part of London?—Yes, it certainly would.

1566. For instance, there are many houses in the East End not very much more than 25 feet high, and which are built very much upon the level of the river?—Yes, but very many of those houses must necessarily be a very long distance from any reservoir under that pressure, and, therefore, there would be the exhausted pressure, which has to be allowed for.

1567. Suppose some fairy could give us at once a pressure of 300 feet, are there any pipes or mains now laid down that would stand it?—Upon that point you would get better evidence from the water companies than I can give, but I have no doubt that there are many pipes in London which are standing more than that pressure already, because they are standing shocks.

1568. Do you think that the service pipes, from which you now take your water, would stand anything like that pressure?—I have heard from the water companies that they would not, but at the same time it is not to be at all supposed that that pressure would reach those pipes; as a matter of fact it would not. If there were a head of 300 feet in London, some of the pipes at a great distance from that head would never be under anything like that pressure; they would probably be under the pressure due to 80 or 90 feet, instead of 300 feet; there must be a large amount of deduction made for exhausted pressure in a large city like London.

1569. Mr. *Forsyth.*] I think you stated that, in your opinion, it was desirable if inquests could be held upon fires, even though there were no loss of life?—I said it would be desirable that there should be the power of holding those inquests.

1570. Are you aware that the honourable Member for Linlithgowshire in 1873 brought in a Bill to make provision for inquiring into the causes of fires, in which it was proposed to set inquests in motion by the coroner or officers of the police?—I believe so.

1571. The Bill was passed through Committee and was ultimately lost in the House?—The Bill was not made law, I believe.

1572. With regard to inquests on fires, it has been stated in a law book, which I have with me, "It has been sometimes regretted that there is no mode by which an inquiry of a judicial character can be made into the causes of fires, when there is no distinct ground for charging any individual with wilful incendiarism. It was long supposed that coroners had such a jurisdiction, and, until recently, inquests on fires appear to have been not unfrequently held in many parts of England. It has, however, now been decided that they have no such jurisdiction; that although they might possibly have possessed it at common law, yet that they must be considered to have been deprived of it by Magna Charta, while the statute *de officio coronatoris* (4 Edw. I., st. 2) confers no such power, but authorises only inquisitions upon deaths held *super visum corporis*." Now, assuming that the old common law of England to have been that coroners should hold inquests on fires, though there was no death, does it appear to you that something of the kind would be advisable now?—It would be advisable that the power should exist to hold inquests, even when there is not a case of death.

1573. What benefit do you think would result from that, supposing there to be no death?—I think it would have the effect of terrifying persons likely to set fire to their houses, and preventing them from doing so.

1574. Have you formed an opinion in reference to what is the most common origin of fires in the metropolis?—I have for many years collected the causes of fires. I have them for 33 years under the old brigade, and I have them now for every year since we have been established; they are clearly tabled out in this table (*producing a table*), but there is no one cause which can be specially assigned as the principal cause of fire.

1575. As far as your experience has gone, and your information has extended, is the chief cause of fire carelessness?—Yes; I consider that all fires are caused by carelessness, either carelessness in the construction of buildings, or carelessness in managing the contents of buildings. Speaking professionally, I should certainly say that carelessness is the cause of every fire.

Captain *E. M. Shaw.*

8 May 1876.

1576. Have fires come under your notice which seem to have been caused by the improper storage of inflammable materials, and something like spontaneous combustion?—The question of spontaneous combustion has always been a very difficult one. I make returns of it every year, but I myself personally have never seen a case which I could positively come forward and swear to as a case of spontaneous combustion, I must take the evidence as it is given to me. Last year I had 16 cases of alleged spontaneous combustion, all of which were to a certain extent proved to me, but I cannot say I was ever satisfied with regard to any case of spontaneous ignition.

1577. Such as for instance hay which has not been properly dried, and, in consequence of not being turned over, has become at last ignited?—Yes, I have had such cases.

1578. Are there frequent instances of false alarms of fires?—Yes, there are a good many cases of that kind.

1579. I mean to such an extent as to impose a sensible burden upon the brigade?—No; last year we had 90 cases of false alarm; we do not complain of 90 cases. In some towns, as in America for instance, false alarms sometimes come to 25 or 30 per cent. on the whole.

1580. Have you any provision in your brigade for relieving men on Sunday so as to enable them to go to some place of worship?—No, we have no means of doing that; we are short-handed; we give, however, all the leave we can.

1581. Therefore, these men are supposed to be all day upon the alert?—Yes, all day, except when they are upon leave.

1582. Have you experienced difficulty in getting men to enter the service of the brigade?—No; I have experienced difficulty in getting them in sufficient number latterly.

1583. That is the same thing, is it not?—Not exactly; the drain upon our brigade through men leaving has latterly reached such a point that although the number of men desiring to enter has increased, and is still increasing, it is not sufficient to meet our demands.

1584. I think you stated that you would like to have men entering the service as young as 17, and certainly not later than 25, but that you were obliged to take them in now as old as 25 or 30, from the difficulty of getting them as young as 17?—That is so.

1585. Is it the case now that you do not find young men of 17 in sufficient numbers to enter the fire brigade?—I think I can answer the question in another way; I find more men willing to join the brigade now than I ever did. I think the recruiting power of this country for my force is very large, and it has always been increasing.

1586. When you talk about the difficulty of keeping up the brigade, does that arise owing to the question of superannuation not being settled?—That affects us not directly but indirectly; the men who come to us do not study the question of superannuation, but as a rule after they have been some time in the service they begin to think they ought to have some claim.

1587. Now going to another point; take the case of the borough of Marylebone, which consists of three parishes, Paddington, Marylebone, and St. Pancras, could you give the Committee the number of stations in Paddington?—We have a station at Paddington close to Paddington Green; we have a station at the corner of King-street, Baker-street; we have a station at the corner of St. John's Wood, one at Notting Hill, one at Portland-road, and one close to the border of the district of Marylebone.

1588. Portland-road would not be Paddington, would it?—Perhaps not Paddington proper, but it is very near the district of Marylebone.

1589. To save time, will you give the Committee, as nearly as you can, the number of the stations and the number of men for the borough of Marylebone, which contains more than 500,000 people?—I do not think I know the boundaries of the parish of Marylebone sufficiently to enable me to answer the question off-hand, but I think all the stations I have named are either in it, or in the vicinity of it.

1590. Besides those you have named, there are other stations in St. Pancras?—Yes; that is more to the east.

1591. Of course what you said just now with regard to wishing an increase in the number of men would equally apply to such portions of it as are told off to the borough of Marylebone?—Quite so.

1592. Mr.

1592. Mr. *Locke.*] The honourable and learned Member has asked you what is the number of stations in Marylebone; I should like to ask you what is the number of stations in Southwark?—The stations in Southwark consist of one in Kennington-lane, one in the Waterloo-road, one in Southwark-street, one in Tooley-street, and there is a station not very far down the Old Kent-road, which is available also for the protection of Southwark.

1593. How many do you make it altogether?—I suppose in Southwark proper, of which I hardly know the exact bounds, there must be four very strong stations?—I hardly know the boundary of any parish in London very accurately. My business does not lie in parish boundaries; I know the outer boundaries of the whole district very well indeed, but I hardly know the sub-divisions of the parishes; I think however that all the four stations which I have named are within the boundaries of Southwark proper. Then there are Rotherhithe, Old Kent-road, and Camberwell, which are not very far outside, and from the opposite side of the water there are several routes by which engines can approach.

1594. I believe you have gone very frequently into Southwark, where there have been fires as often I suppose as in any other part of the metropolis?—Yes, we have a large number of fires in Southwark.

1595. Has it not occurred very frequently when you have gone there that there has been no water found to put out the fire?—In certain parts of the district that has happened.

1596. And has it not occurred that there has been no water found to put out fires actually by the side of the river?—That has been the case.

1597. And that has been the case in very great fires indeed; fires which have burned down a great number of houses close upon the river in Southwark?—I am not quite sure that that occurred in Southwark proper, because as I said before I hardly know the bounds, but that has occurred in the lower ends of Bermondsey and Rotherhithe.

1598. Do you know London Bridge?—Very well.

1599. Are you aware that there is one end of it in Southwark?—Yes, I know a large portion of Southwark.

1600. And are you not aware that pretty nearly the whole of one side of that street, where you turn down to the left, was all burnt down some years ago?—Yes; you are referring to Tooley-street.

1601. And are you not aware that there was no water to put out that fire?—I have heard so; but that was before my time. In saying I did not know the bounds of Southwark, I only wished to say that I was not sure whether the lower ends of Bermondsey and Rotherhithe, which are badly supplied with water, were within the limits of Southwark or not.

1602. They are; and you say that in those places there have been fires to a great extent?—There have been.

1603. Has the water been supplied from the River Thames upon those occasions?—Yes, wherever it was possible to do so water has been supplied from the River Thames.

1604. But was it not frequently the case that those vessels which were placed there to throw water upon the fire have not been in a fit state to be used?—No, it has very seldom happened that they have been in a state unfit for use.

1605. But where they have been used?—They have always been used when they were required.

1606. But not at once?—They were used as quickly as possible.

1607. However, the places have been levelled to the ground, have they not?—I do not think so extreme a case has occurred. I do not remember one at present.

1608. Now with regard to the water which has been thrown on the fire from the land, does that succeed?—Where the water is in sufficient quantity it does.

1609. Have you had it in sufficient quantities?—Not always.

1610. How is that?—It is not for me to say.

1611. Is it the fault of those persons who you employ that they do not take the trouble of getting the water and sending it into the fire, or is it on the contrary that there is no one to turn the water on at all; has that been the case?—In all of those cases the cause is simply that the water arrangements of the place are not such as to give us a large supply.

1612. Why is that?—It is not for me to say. The water company will, no doubt,

Captain *E. M. Shaw.*

8 May 1876.

doubt, explain the matter; but I suppose it is that there is no need of any supply of water there for domestic purposes.

1613. The water company would have an object in supplying water for itself, would it not?—It would.

1614. I wish you to give your information from what you have seen and known with regard to the water companies, and I would ask you whether they have sent you the quantity of water to put out those fires that they ought to have done; whether they had any to send in the first place, and in the next place whether you have had it when they have sent it?—The water-pipes in these districts are very small. The water companies give us all the water that can be conveyed under the head that they have available through such pipes.

1615. The water companies have plenty of water, but they have no pipes to send the water through, is that so?—The pipes in this district are very small.

1616. Is the result of that that there is not a sufficient quantity of water supplied by the companies to put out fires in Southwark?—Yes, in certain parts.

1617. And very uncertain parts, too; in all parts?—There are many parts of Southwark very fairly supplied with water.

1618. These small pipes spread themselves throughout the whole of the place, do they not?—I think that in many of the leading parts of Southwark the supply of water is not to be complained of.

1619. For instance, what part is not to be complained of?—The streets leading straight down from London Bridge; Blackman-street, for example.

1620. You have not had a fire there?—We have had many fires.

1621. But the greater number of fires have been by the side of the river, have they not?—Yes, many fires have been at the side of the river.

1622. I believe there was a great deal said upon one occasion, when almost the whole side of Tooley-street was burnt down?—There was a great fire in Tooley-street.

1623. You were not at that fire?—No, I was not.

1624. Can you tell the Committee what fires there have been since you have had the command?—Since I have had the charge there has been a fire in the very same warehouse, and almost in the very same part of it; but we managed to get it out at an early stage.

1625. Did you get water from the river in that case?—We could have got water from the river upon that occasion if we had required it, because the tide was suitable.

1626. But you did not get any?—No; we only used, as well as I remember, one engine.

1627. Then the fire was put out upon that occasion very quickly?—The fire was put out satisfactorily.

1628. There was a fire, I think, further down, very recently, at the end of last year, or the beginning of this year, if I remember rightly?—I do not remember any fire of any importance there recently.

1629. What improvements do you think necessary for the supply of water in Southwark; you say, in one respect, that the pipes are very small, and that you cannot get sufficient water through those pipes; is that district in a worse state than any other part of London?—Yes, I think that there are parts of Southwark which are in a worse state than other parts of London in that particular.

1630. Where is that part supplied from?—There are two companies supplying that district; the Southwark and Vauxhall and Lambeth Companies supply together, I should say, very nearly the whole of Southwark.

1631. Who put down the pipes?—That I cannot say, but I presume the water companies.

1632. The pipes are not big enough for the water to go through them; is that so?—I presume the pipes are large enough for the quantity of water which the companies sell.

1633. That is what they sell to people for washing their faces, and not what they sell for putting out fires?—I have always heard that the water companies were ready to put down pipes if anybody else would pay for them.

1634. But

1634. But they would have to send a great deal more water down them, would they not?—No, I do not think they would.

1635. Are the companies desirous of giving as much water as they can?—They have always given us every possible assistance that they could.

1636. What makes the water companies so willing to oblige you?—I cannot say, but they give us every possible assistance. Of course I should not expect the water companies to supply us with more water, any more than I should expect a fire-engine builder to supply us with more engines, unless they are paid for it in some way.

1637. Who do you think should supply the water?—I cannot say.

1638. You think that you should get the water?—I think that we should get the water, but I never went so far as to say that the water companies ought to give it to us.

1639. Who should?—I cannot say; I think the public ought to provide it themselves.

1640. Then under those circumstances there never will be a proper supply of water, if you say that the water companies are not able to give it you?—I presume the water companies will not lay down pipes for a larger quantity than they can sell in the districts; as there are not buyers the water companies cannot be expected to lay them down for us to use the water for nothing.

1641. Therefore as you are not buyers they cannot be expected to give the water to you for nothing, but somebody should pay for it; it never struck you who that some one should be who should pay for it, I presume?—I presume the public should; that always has been my opinion.

1642. What part of the public?—The vestry, I might say, but that is quite out of my line; I only say it should be done.

1643. What I understand quite clearly from you is, that there is not a sufficient supply for the purpose of preventing people's houses being burnt down?—That is the case in some parts of Southwark.

1644. Mr. *Hankey*.] Do you think that the fact as to whether property is insured or not should enter in any possible degree into the question of the protection of property from fire?—No, I do not.

1645. *Chairman*.] In answer to the honourable Member for Southwark, just now you stated that the supply was not satisfactory with regard to the water in those streets abutting upon the river; is that mainly because the supply pipes there are service pipes, and not mains?—It is entirely caused by the pipes being too small to deliver the quantities which we require.

1646. The question I ask is, are the pipes in those districts leading down to the river which you would use upon an occasion of fire, principally service pipes, or do mains run through that part?—They are principally service pipes.

1647. Which are smaller than the mains?—Yes, they are smaller than the mains, naturally.

1648. Are the mains in Southwark smaller than the mains in other parts of the metropolis?—No, I think not.

1649. Supposing a constant supply of water existed in the mains, could you get a supply of water in the Southwark district which would meet the requirements which you have specified for putting out fires?—No, I do not think so, so long as the present service pipes are so very small.

1650. To bring about a constant supply in that neighbourhood it would be practically necessary to relay the service pipes?—Yes, it would be necessary I think.

1651. Would a constant supply bring about a greater waste of water than exists at the present moment?—I cannot answer that question, I have heard so many opinions about it; my own opinion is that it is true economy to have a constant service, but there are people who assert that the constant supply system involves loss of water.

1652. Then with regard to some questions put by the honourable Member for Linlithgowshire; you were asked whether a diminution had not taken place in the proportions since 1866, and whether fires, whose cause was unknown, were not less frequent; and he asked you upon that whether it did not prove that your position was sufficiently satisfactory now as regarded being able to cope with fire. I would ask you upon that, was it not your intention to put it before the Committee that although the means of coping with fire have been very much

Captain *E. M. Shaw.*

8 May 1876.

much increased since 1866, they are by no means up to the point that you would wish for the perfect security of London, and whether, if that point were arrived at by an increase of the staff and material with which you work, these unknown fires, and fires generally, would not be even very much further reduced?—Yes, I think so.

1653. In answer to a question from the honourable Member for Rye, when he pointed out to you that the supply of water had only been shown, by your return, to be short in four cases; although that is the case, supposing you had had a better supply by the constant pressure system, and had been able to avail yourself of it, as you would have done in many instances; besides those four, your chances of dealing with fire would have been very much increased, would they not?—Yes, and the losses reduced.

1654. The risk of a fire becoming serious depends upon the quickness of your being upon the spot, and the readiness with which you can get an ample supply of water under pressure?—It does.

1655. I should like to ask you whether your attention has been at all directed in connection with putting out fires to establishing what I see is established in a great many foreign countries with which I dare say you are acquainted, namely, numerous call-points, as well as the fire brigade stations?—Yes, it has.

1656. I see in Paris that whilst there are only 11 engine stations, there are as many as 87 places where calls can be made; do you think that a system under which the call-points were multiplied throughout the town would materially assist you, should those call-points be connected telegraphically with your stations?—I think so; but your statement about the call-points in Paris is not exactly in accordance with the state of things. Everyone of the places which you have designated as call-points is a station in which there are men and engines. There is no such thing in Paris as a call-point, merely as a place of call.

1657. Are those the same as what are reported to us as call-points in St. Petersburg and Berlin?—I think so; in Berlin, certainly.

1658. And that those call-points are all furnished with materials for putting out fires themselves?—They are all small stations; there are a few places in Berlin where the stations are only open by night, and perhaps they might be called call-points by day.

1659. I would only ask you whether you might, in your opinion, save a very large increase in the number of your stations by adopting a system of call-points; placing, for instance, a hose in the box at the place where a policeman is fixed as a stand-point, and thus availing yourself of that policeman's service for the first few minutes at a fire before he can, by telegraph, communicate with you, and you can, in answer to that, bring your engine to bear upon the fire?—I think so, but I think it would be better done by connecting us with the police stations, and having the appliances in the police stations.

1660. What I mean is that the police stations would be merely a multiplication of the fire brigade stations; the stand-points where the police are fixed throughout the town, and which are being multiplied yearly, would be so many points close to the breaking out of any fire; if those points were connected both with their own police stations and the nearest fire station to them, might you not avail yourself of the policeman standing there for the preliminary work before the engine arrived at the fire?—Yes, we might.

1661. Do you think that such a system would assist in diminishing the number of serious fires?—I think it would.

1662. Connecting that always with the idea that the mains throughout the town were under constant pressure, and that, therefore, the policemen upon those stand-points could apply the hose at once to the water supply?—Yes, but even without taking the water supply into consideration at all, everything which increases our number of places of call will diminish the number of serious fires.

1663. That is to say, waste of time principally occurs in the time it takes for the knowledge of the fire to reach the station?—Yes.

1664. And if you can diminish that time in any way you will so far diminish the number of serious fires by extinguishing many of them before they have got a hold?—Yes; I have no doubt that would be the case.

1665. Supposing

1665. Supposing the constant supply not to be established, would hand-pumps, which I believe you use with regard to chimney fires, if placed at stations of this sort, assist materially in checking the outbreak of fires?—Yes, certainly they would.

1666. And in the way I suggested should a constant supply exist, or in this way, if it did not, you could avail yourself much more largely of the services of the police force than you do at present?—Quite so.

1667. Because the police at stand-points can be moved with less interference with duty than the police on beats, and could at once be used for the purpose of applying water to a fire in its early stage?—Yes, I think so.

1668. Of course when you say you would wish the police stations to be connected with your fire brigade stations by telegraph, and to be in communication with the call-points of the districts, are you aware of the way in which the police stations are distributed?—Yes, more or less.

1669. Do you think that the police stations are so distributed that they would be in the positions which you would select, if you were mapping out London, for covering the districts with call-points?—No, I do not, but as they are established I think it would be better to avail ourselves of them than to go to the expense of establishing new places. There is an advantage in the police stations being thoroughly well known: there are cases of our own stations not being well placed, but because they have been where they are so long, I would not wish them to be removed.

1670. Do you think that those police stations being where they are, are in themselves known to the public?—Yes, they are always known in the neighbourhood.

1671. And that observation would apply also to the point where a fixed policeman was established?—It would.

1672. Practically, the policeman on the beat would be able to communicate at once with the policeman on the stand-point?—Yes, he would.

1673. And he would be able to apply almost at once the means for extinguishing a fire?—Yes.

1674. That is supposing that these stand-points were telegraphically connected with the nearest station, so that before he left with his hose or ladder, or whatever material he was supplied with in his box, he had communicated to the station, so that the engine might arrive immediately afterwards?—Precisely so.

1675. And therefore the stand-points would have an advantage over police stations, because their distribution is more wide throughout the town?—Yes, if their distribution at present is really as you describe. I am not aware that the stand-points are as numerous as the police stations, but of course I answer the question in the affirmative. The great point with us is to have the distribution of call-points as wide as possible.

1676. My reason for asking the question was to ask whether it was your opinion (gathering from you that you saw difficulty in making use of the police who were upon beats) that you could avail yourself of those stand-points if they were properly distributed throughout the town, as small stations in fact, in connection with your office, and as having a man placed there who not being absolutely compelled to remain upon a beat for the protection of property, could be taken off that stand-point for such an occurrence as a fire?—Yes, I think he could be made very useful.

1677. I understood what you stated in a former part of your examination, but I wish you to repeat it now; that although the serious fires are reduced to 8 per cent. at present, yet with the staff that you have suggested, and with the appliances which you wish to have placed at your disposal for this purpose, you believe that you could seriously diminish that proportion?—I do not know whether I gave that answer in positive terms. What I wished to say was, that we should seriously diminish the loss of property; there is no doubt that in many of these cases the fires would be serious, no matter what force could be brought upon them.

1678. Mr. *Ritchie.*] You would reduce the severity of the serious fires, in that case, would you not?—Yes, it would enable us to reduce the severity of the serious fires.

1679. *Chairman.*] If you could multiply your resources, you could bring

Captain *E. M. Shaw.*

8 May 1876.

those resources to bear so much more quickly upon fires, that a very much larger per-centage of fires would not take the form of serious fires, from the appliances being brought to bear upon them at an earlier period?—I think that the severity of the serious fires would be very much reduced, and that a quantity of property would be saved which cannot be saved at present.

1680. And that many fires which have often got to such a pitch that your only object on arriving is to prevent their spreading to surrounding property, might be checked by your arrival earlier?—Quite so; both earlier and in greater force.

1681. There was one point upon which you stated, with regard to the river floats, in answer to an honourable Member, that the river floats have been available as readily as you would wish upon fires which have taken place upon the river?—That was with regard to the special fire about which the honourable Member inquired.

1682. Was not it the fact that from want of water in the river the engine did not arrive there for a very considerable time after the fire broke out?—No, it was not the case. The engine arrived in fair time at that fire, and got to work in as short a time as it is possible for such a machine to get to work upon the river.

1683. I understand from your recommendation at page 14 of the Appendix, dated 23rd of October 1868, that you would be anxious to place your float in such a position as that it could be always brought to bear in a very much shorter period than it is at present. In that statement you say you wish the float to be alongside a pier, "so as to be ready at all times to move away within two or three minutes of receiving a call, instead of having to wait, as at present, at certain times of tide, nearly half an hour getting the men on board." You are still of that opinion, are you not?—I am.

1684. And that rather goes against the view that the floats are available now in the quickest possible time?—The question put to me by the honourable Member was not in connection with the floats starting; it was in connection with their business after arriving and getting alongside the land.

1685. What I want to know is whether you consider your present arrangement of the river floats satisfactory in respect of the time in which you are sure of getting them to the fire?—No, I do not think they are; I think they might be very much improved by having the floats alongside a pier.

1686. Do you think that you would be able to work the system better by smaller floats?—I think it would be very useful to us to have some smaller floats, but I do not think we could dispense with any of the larger ones.

1687. I think you have recommended to the Board of Works the establishment of smaller floats, with a view of getting them to work quickly, while the larger float was getting up its steam?—That was one of the suggestions.

1688. That suggestion is not yet acted upon?—The suggestion is under consideration.

1689. I see in the return which has been put in by the Metropolitan Board with regard to saving life from fire (that is Paper No. 3), that there is a note, referring to a Minute of yours to the Fire Brigade Committee, dated 26th of May 1868. Was that one of the letters which you considered private communications, because I do not see it among the number of returns that are published?—No, it was not.

1690. That is a report made by yourself to the Fire Committee upon the 26th of May 1868, which is not handed in?—There are a large number of reports that I have made to the Committee from time to time which have not been handed in, because I did not see that those reports applied to the class of information which this Committee required.

1691. This affects very much one of the questions which has been asked, namely, the granting of gratuities to the men for "services rendered in discharge of their duties." Now, you do not recommend the Board to grant those gratuities?—No, I have never recommended gratuities to be given to the men for services rendered in the discharge of their duties.

1692. You would still recommend that those services should be recognised by a merit badge rather than by gratuities?—Yes, I think that will be found in these reports.

1693. Do these extracts practically contain the greater part of what you read before the Board on the 26th of May 1868?—I cannot say; this paper has been only placed in my hands since I have been here in the witness's chair.

1694. There

1694. There is one point I should like to ask, if your attention has been directed to it, that is, as to the means of extinguishing fire by chemical processes; have they been brought to your notice at all?—Yes, they have.

1695. Will you give the Committee your opinion with regard to the value of those inventions?—I have seen nothing yet in that way sufficiently matured for general use. I always encourage everybody who comes with those things, and I go and see their operations when they have experiments, but generally the experiments are conducted in such a way that one can plainly see that they are only made for the purpose of selling the article; in fact, that they are not satisfactory in such a way that, as a public body, charged with the protection of the metropolis, we could yet adopt them. I have always hoped, and I still hope, that the time will come when some chemical addition shall be made to the water used for extinguishing fire, and when that does come we shall be very glad to avail ourselves of it.

1696. Having turned your attention to the fact, at present you do not see anything in those chemical means which would materially assist you in working the brigade?—I think that if we were to put aside altogether the question of pecuniary loss, there are many cases in which I could avail myself of chemical mixtures added to water; but of course as a public servant I have to look at the pecuniary results in some degree. I think there are many classes of goods which would be utterly destroyed by any chemical that I have seen yet. For instance, articles of food would be quite destroyed. I do not suppose that they would be fit for use after having chemically prepared water poured upon them, and many articles of clothing would also be unfit for use. Although the articles would in some fashion be saved, yet as articles of commerce they would be entirely destroyed.

1697. In point of fact you believe that the loss of property under the use of chemicals would be greater than it is at present?—Yes, I have seen very few of them that I should be induced to take up, although I have seen successful experiments.

1698. I believe that one point which you have always been wishing to see carried out in the metropolitan area, has been the establishment of a headquarter station for your brigade?—Yes.

1699. There are several of your reports in that direction?—Yes, there are.

1700. In those suggestions have you contemplated establishing a new central station, and a re-arrangement of your districts?—No, it is simply an advantageous operation for working the whole institution generally.

1701. Which might be more completely worked from that point as a central station?—Yes.

1702. Mr. *John Hardy* (through the *Chairman*).] I think you have given it as your opinion with regard to the question of increased water supply, that if in order to use this supply of water it is necessary to lay down larger pipes in a district than are necessary for the service of the company, the extra cost of the laying down of those larger pipes should be borne by the public, and not by the body that preserves the public against fire?—I do not know what the responsibilities of the governing body of London are, but I say that I should never expect the water companies to do it unless paid for doing it. I took the parallel case of fire-engines; we do not expect fire-engine builders to supply us with engines for nothing, and of course we should not expect the water companies to supply us with their stock for nothing.

1703. I thought you would put them upon the same footing as with regard to hydrants, of which the expense would be borne by those who put down the hydrants?—I should suppose the expense would be borne by those who are specially interested.

1704. Mr. *Locke* (through the *Chairman*).] Are the water companies paid now?—No, they are not.

1705. *Chairman.*] An honourable Member wishes me to ask you for an explanation of Question 1237, in reply to which you said it would be obvious that if the money had been spent by you it would have been spent in a different direction; have you any definite scheme by which you would have spent the money differently?—No; I only meant to convey that while my Board was looking at the leases, rents, and sites of buildings, I should have gone entirely into the *personnel* and *matériel* of the brigade, and should have developed it in

Captain *E. M. Shaw.*

8 May 1876.

that direction, leaving the other questions to remain over until such time as it would appear whether it would be economical or not to spend money in that way.

1706. Did you recommend that to the Board at the time, pointing out that the strength of the brigade and its efficiency was injured by the want of money being spent upon it, and that you would recommend that any money that was spent should be devoted to that object rather than to buildings?—I am not certain that my recommendations took that form, but of course that was the intention of my recommendations; of course, as a rule, I only make recommendations about men and engines and appliances.

1707. But naturally having the interest of your brigade at heart, you would be anxious that they should be made more efficient?—Undoubtedly.

1708. Sir *James Hogg* (through the *Chairman*).] Would you point out any one report of yours which conveys that to the Board?—I do not think I can.

1709. Have you ever made that report to the Board?—I have always said so.

1710. Have you ever made that report in writing to the Board?—I do not think I have.

1711. Have you ever recommended that the outlay should be made upon the men, and not in houses and leases?—I do not think I have.

1712. *Chairman.*] As I understand, you, being present at the committee which goes into the question of the efficiency of the brigade and its maintenance, have pointed out to that committee that the money should be expended rather in the direction of the greater efficiency of the men than in the way the Board seemed inclined to spend it at the time of that return. It would not have practically taken the form of a written recommendation, so much as the form of an opinion given to the Board when you were before them, upon the question of the expenditure of the money?—My position with the Board was such that I brought forward cases in which I required men and material of various kinds, appliances, and so forth, during the last 10 or 11 years, and I am not aware that I have brought any cases of purchasing leases or sites at all before them, because it did not come at all within my functions to the Board. My duties to the Board were to deal with my own department as a separate department, upon those points which were entrusted to my care.

1713. And, therefore, whatever the Board's decision may have been with regard to any particular expenditure of money for any purpose, you would naturally have advocated your view in respect of the money being spent for the purpose of creating greater efficiency among the force?—Yes, certainly my opinion has always been that.

1714. Sir *James Hogg* (through the *Chairman*).] Do you recollect whether at any time you ever expressed that opinion to the Fire Brigade Committee?—I think I have always expressed that opinion, or given it to be understood.

1715. When you say you have given it to be understood, are not your reports made in writing?—Yes, my reports are made in writing, but my advice to the committee is not given in writing.

1716. If the money which has been spent in buildings had not been spent in buildings, but in engines and men, would it not have been necessary to hire lodgings for the men, and also stables for the horses and places to put the engines in?—Certainly, it most distinctly would have been necessary.

1717. And there would have been a greatly increased cost; would not that have been the case?—I presume it might have been, but I think my reply to the question is perfectly clear and simple. It was not my function to purchase lands and stations; my functions were of a different kind; I was there for the purpose of drilling and instructing the men, and of course all my recommendations went in the direction of increasing the number and pay of the men, and the appliances, and so forth. I was not entrusted with the duty of building stations. My functions are altogether in a different direction.

1718. *Chairman.*] All you mean to say in that answer is that if you spent the money you would have spent it in a different direction, because naturally you look more to the efficiency of the men than to the creation of buildings?—Certainly.

1719. Sir *William Fraser* (through the *Chairman*).] If the services of the fire brigade were required under any other circumstances, do you consider you have a sufficient

a sufficient number of men to supply the wants of managers of theatres, music halls, and other public buildings for protection against fire, not the extinguishing of fire; could you at all spare a sufficient number of men from the force that you have at present to supply those demands which possibly are being made?—I could not.

1720. Could you not under any circumstances spare a number of men, ever so small, to be on guard in the evening?—Certainly not out of the present force.

1721. Have you thought whether the force you have been suggesting would be sufficient to meet those requirements?—No, I have not taken special cases into consideration. I think that special cases must be met by special arrangement.

1722. Sir *James Hogg* (through the *Chairman*).] Are not special arrangements made with regard to public buildings by special men being told off for the purpose in public buildings?—Yes, in a few of them.

1723. Are those men who have been formerly in the service of the brigade?—They are men who are now in the service of the brigade in several cases.

1724. Do you include those among what you call men on duty?—Yes, I do.

1725. Do you practically meet many of the public buildings requirements through your present staff?—We meet the requirements of the General Post Office, the Custon House, and the Seamen's Registry Office. No others.

1726. Mr. *Clifton* (through the *Chairman*).] Having named those three places, have you omitted the British Museum from the number you have stated?—The British Museum is not protected by the Metropolitan Fire Brigade. The British Museum has arrangements of its own, which are under my personal control. The men are all men who have served in the Metropolitan Fire Brigade, but who have resigned and gone into the service of the British Museum.

1727. Those men are not in the force then?—Those men are not in the force.

1728. *Chairman.*] That is a private arrangement, only the authorities have the advantage of placing the men under your control?—Precisely.

1729. Sir *William Fraser* (through the *Chairman*).] It should be understood that for places of amusement and places usually open of an evening, there is no protection given by the established fire brigade?—That is so.

1730. Are you aware that in different towns on the continent public places of amusement are under the protection of the fire brigade?—Yes; places of amusement are under the protection of the fire brigade in almost every place of importance on the continent.

1731. Do you think it would be advisable so to increase your strength as to be able to keep men on duty in places where fires are likely to arise?—In the present condition of places of public amusement in England, I should be very unwilling to incur any responsibility in the matter at all. I think if the matter is taken up at all, it should be taken up as a whole. I think it is very desirable that some protection should be given to places in which large numbers of people meet together.

1732. And, therefore, in order that the Committee may understand it, there are, with the exception of the three places you have named, no number of men told off nightly for the purpose of protecting places of public amusement or public buildings generally against fire?—With those three exceptions that is the case.

1733. The police are there, are they not?—That I cannot answer for; the police would answer that question for themselves.

1734. *Chairman.*] Your answers are confined to your own brigade?—Entirely.

1735. The only other point before you sum up your evidence, if you wish to sum it up, is that I would wish to ask a question with regard to superannuation; I suppose what you would put before the Committee is, that a superannuation scheme is a more satisfactory way of retaining men in your service than by giving them a high rate of wages, because that the men with a superannuation scheme, after having contributed to it are anxious naturally to remain till they get the benefits of it, whereas a high rate of wages would not practically alter so much the condition of men leaving you for any other engagement?—That is my opinion.

1736. And you do attach very great importance to a scheme of deferred payment

Captain *E. M. Shaw.*

8 May 1876.

ment which would satisfy the men in that way, and which you believe would retain them when they became efficient men for many years in your force?—I do.

1737. Mr. *Hardcastle* (through the *Chairman*).] I wish to ask you whether you think that any large number of the 600 men whom you stated had left the brigade in the last few years, are employed in the capacity of private firemen?—Yes, they are.

1738. Do you know what number of men have left for that purpose?—I can hardly tell off-hand; but a considerable number have gone away for the purpose of taking charge of fire brigades in other cities and towns, and even in the Colonies.

1739. Is that because the inducements held out by other cities and the Colonies are very much in advance of what are held out by the fire brigade?—Very much so.

1740. Sir *Henry Peek* (through the *Chairman*).] Are the uniforms of the men included in the wages, or are they extra to the wages?—They are extra to the wages; they are in addition.

1741. Mr. *Forsyth* (through the *Chairman*).] Is the uniform supplied more than once a year?—It is supplied once a year.

1742. Sir *Henry Peek* (through the *Chairman*).] You have laid great stress upon the necessity of having a central station. If I rightly understand, the Government has for sale, at this present moment, the site of the Registry Office, which, as I understand, is 120 feet square, and with a large frontage to Queen Victoria-street, and with a frontage to a good back street; would you consider that a good site if the Government would give you that; in fact, have you considered where you would place your site?—It would be found in these reports.

1743. And do you think that the site which the Registry Office now occupies would be a good site?—I think, in comparison with the present station, which does duty for head-quarters, it would be very much better; but I do not think that it is as good a place as could be found.

1744. That site would not come up to the advantages which are to be found in places which you have recommended?—No, I do not think it would.

1745. *Chairman.*] There is another question an honourable Member has asked, and that is with regard to the fines on the men. I should like to ask you how that fund has been applied; I see the fines come to something like 368 *l.* 16 *s.* in the 10 years?—That money remains in the hands of the Board; it is money which has never been drawn in fact.

1746. The money is not applied in any way to the superannuation fund?—It is not.

1747. Mr. *Onslow* (through the *Chairman*).] You stated that your recruits were always derived from one source; if you recruited from other sources, could you get a larger number of men of the age of 17?—No doubt we should.

1748. In your opinion would those men be as available for the purposes of your work?—No, certainly not; I can always get men.

1749. I understand you to say that you have plenty of applicants, but that the drain upon your force by the men leaving it is so great that the number of applicants does not come up to the number of men who leave?—That they do not exceed the number of men who leave.

1750. *Chairman.*] And that consequently instead of having, as was formerly the case, a list book with a number of applicants waiting to be taken on you are rather in a deficiency than in a condition of superabundance?—Yes.

1751. Are the forces recruited at stations abroad, say in France or America, always sailors?—In almost every country in Europe the men are soldiers; in America they belong to almost every trade and profession, and really they are of every age almost; there are some towns in America in which there are as many as 1,000 and upwards of firemen, but of course, in our sense of the word, there may not be any trained men at all.

1752. Mr. *Forsyth* (through the *Chairman*).] Did not the fire brigade in America turn out one of the most effective regiments employed in the war?—Yes; there was a contribution of men from many of the fire brigades, who joined together and formed a regiment of soldiers, and I belive did good service.

1753. *Chairman.*] There would be no reason why your own brigade should not

not be equally serviceable if a like occasion arose?—But here the profession of a fireman is a regular business; in other countries it is not. Boston, for example, has 460 firemen; they are spending 104,000 *l.* a year upon that in English money, but those men are not firemen in our sense of the word at all; they follow other occupations. In San Francisco they have 1,023 firemen by the last return they have sent me over. In all probability in that number there are not 100 firemen in our sense of the term; the others perhaps are men who have been attached to it for the last 50 years, and are not bound to go out at all.

1754. Sir *James Hogg* (through the *Chairman*).] Do you know what is the case in New York?—In New York, by the last return which I have in my hand, they have 600 men, and they are spending 185,000 *l.* a year of English money.

1755. Mr. *Onslow* (through the *Chairman*).] In your experience, it is quite practicable, is it not, to have a thoroughly efficient fire brigade when it is recruited from other sources than that of sailors?—Yes; I know cases in which there are good fire brigades which are not solely recruited from sailors.

1756. That is the case with many of the district fire brigades in local towns in England?—Yes; that is so.

1757. How do you know that a man is a sailor?—By his ship's papers.

1758. You always get them from him?—Yes, always; we examine the certificates of his service, and of his character in the service.

1759. It is immaterial to you whether a man comes from the Royal Navy or from the merchant service, is it not?—It used to be so, but now it is not so. I prefer the merchant service.

1760. *Chairman.*] I understood you to say that you would like to summarise your evidence before you left the chair?—No, I am not sure that I do. I think I have put my four principal points before the Committee to-day. The only remaining point is, that I have been asked so much about money that I should like to give a general view of it, merely speaking as a fireman on the matter. According to the old rate of calculation, it was always assumed that the assurance in London was paid for at somewhat like 3 *s.* per 100 *l.*; in other words, 1,500 *l.* for 1,000,000 *l.* insurance. Calculated at that rate, there is being paid at present in London a sum of 810,000 *l.* a year for insurance. Now the annual expense of protection from fire is 76,000 *l.*, and when that comes to be calculated over an amount of property valued, on a reduced estimate, at 1,200,000,000 *l.* it will be found that for an amount of between 65 *l.* and 66 *l.* there is only 1 *d.* a year paid in direct protection. Now, the insurance on 65 *l.* amounts to 23·4 *d.*, so that it will be seen that the amount paid for insurance is to the amount paid for protection in the proportion of 23·4 to 1. I think this is a very important fact, and one worthy of serious consideration on the part of those concerned in the preservation of property.

1761. Is that all you wish to lay before the Committee?—Yes, that is all.

1762. Have you witnesses present who can speak for the various ranks?—I have a witness of each rank in the brigade.

1763. I think I understood you to say that you would wish to place the superintendent of one of your districts in the chair?—Yes, I have a superintendent here. I have a first-class engineer in charge of a superintendent's station; a first-class engineer in charge of an ordinary station; a second-class engineer, and one of each rank of firemen of the four classes.

1764. Can you give the names of the witnesses?—The superintendent is Mr. Hamlyn; the superintendent's engineer is William Port; the first-class engineer in charge of an ordinary station is George Duck; the second-class engineer is George Bull; the first-class fireman is John Kelly; the second-class fireman is James Morris, senior; the third-class fireman, George Wittwer; and the fourth-class fireman, Duncan Fitz-Maurice.

Mr. *William Hamlyn*, called in; and Examined.

Mr. *W. Hamlyn.*
8 May 1876.

1765. *Chairman.*] You are a Superintendent in the London Fire Brigade, are you not?—Yes, I am.

1766. Of what division are you superintendent?—Of the D division.

1767. How long have you been in the force?—I have been nearly 24 years in the old establishment and the metropolitan fire brigade together.

1768. You came over from the establishment to the fire brigade when it was transferred to the Metropolitan Board of Works?—Yes, I did.

1769. Can you give the Committee what the hours of duty are with regard to your brigade?—The hours vary very considerably. Last month the number of hours was from 13 to 14 on the average, through my district, per man.

1770. Did each man average 13 or 14 hours of actual duty?—Yes.

1771. And what was the relief from that?—The men are always in attendance. If they are not on actual duty, they are on the premises.

1772. Do you mean that leave is very seldom obtained?—Very seldom.

1773. And then not for any length of time?—And then not for any length of time.

1774. Will you describe to the Committee what the duties of a head station, such as you superintend, are; how many men are there at it?—I have 18 stations, and one floating station, making 19, and there are 27 fire escapes in my district.

1775. Are all those 18 stations connected telegraphically with your centre?—Yes, either directly or indirectly.

1776. I suppose your central station is connected telegraphically with the head station of all?—Yes.

1777. The Committee have understood from Captain Shaw's description that upon a call for a fire from one of your outlying stations telegraphic communication is at once sent forward to you?—Yes.

1778. What is your own action upon receiving that communication?—They telegraph the call and say that they have gone with their engines, and according to the fire I send assistance on from other stations nearest to the point, and I telegraph to the chief station for assistance according as I consider necessary.

1779. How do you form a judgment with regard to the degree of intensity of the fire?—That information is obtained from the man who brings the call, and judging from the nature of the place, we know most of them, and the buildings, and their magnitude, and so on, and the population, and putting those matters together we have to use our own judgment.

1780. Do you feel that the present system gives you all the facilities you could wish with regard to the distribution of stations for coping with fires?—So far as the arrangements go, they are very satisfactory.

1781. If the stations were multiplied I suppose the multiplication of the stations would give you greater facilities for being at once upon the spot when a fire breaks out?—Yes, that would be so.

1782. Do you think that that would be a great advantage?—Yes, I do.

1783. In your opinion what is the period in which it would be of the greatest possible advantage for the appliances to be brought to bear upon a fire?—As instantaneously as possible.

1784. That, at present, as I understand, can hardly be the case with the arrangement of your stations?—In many places.

1785. I forget whether Captain Shaw gave the Committee the greatest distance in your district of a station from any given point; are you aware of that?—Speaking of my own district, from New Cross, the nearest station to that is Deptford, a mile and a quarter.

1786. Is that the longest distance from any given point that a station can exist?—In Dulwich village the nearest point is two miles.

1787. As I understand, your district is not so overcrowded with buildings as the other districts are, and in consequence the distances are, perhaps, not quite so material?—Quite so.

1788. When

1788. When a call to a fire comes, and the engines are turned out, what number of men do you generally find available at each of your stations?—It varies.

1789. But at your outlying stations generally?—Sometimes two; I have known one.

1790. Is it possible in a station where there are only two men that you can get your engine out, and start it in a reasonable time?—It is not done so quickly as it would be if there were more men.

1791. With regard to the turning out of the men, do you think that it would be very advantageous if all the men were located upon the spot?—I think it very necessary.

1792. And that the present system of lodging out, if possible, should be done away with?—Yes.

1793. When an engine goes out, is there any officer in charge of the men?—Yes, the charge is taken by the senior man in charge at home.

1794. At present the force is short-handed, and frequently the man in charge is obliged to do the work of an ordinary fireman with an engine, is he not?—It has been so at fires.

1795. Is that generally the case?—I would not say generally, but at large fires more particularly.

1796. Would it be advantageous, do you think, that the man in command should not be so engaged, but should be able more to direct the energies of the other men?—I think it very necessary that it should be so.

1797. In fact, that he should be free from actual hard work, and able to see how the fire was going on, and what appliances or alteration of appliances should be made?—His business should be to control the operations.

1798. With regard to the question of superannuation, do you speak with a knowledge of the feelings of the men upon that point?—I do.

1799. I suppose the men have considered the point for some time?—For some considerable time.

1800. And you have, upon more than one occasion, recommended their claim to the Metropolitan Board of Works?—Yes, that is so.

1801. With your experience of the force, do you consider there is a great advantage in a superannuation system?—I think a system of superannuation would be a very great advantage to our force.

1802. Would it be an advantage in retaining men in the force?—That is the advantage which I consider most in the matter.

1803. As I understand at present, the men contribute to the superannuation fund?—Yes, they do.

1804. And that men who have so contributed, after contributing a certain sum, feeling that if they remained in the force they would have a prospect of a fixed pension, would be less likely to leave, or, in fact, would not leave the force?—Yes.

1805. And that you would retain in your service men who would every year become more efficient for your purpose?—Yes.

1806. Instead of having constantly to train up new men for your service?—Yes, and that is a most important point with us.

1807. I suppose in dealing with fires a novice is of very little use for some time, or is a mere question of muscles for some time, until he comes to be of use as a head-piece?—He is only fit for pulling and hauling for some time.

1808. And therefore, for the efficiency of the force, you attach great importance to the establishment of a superannuation scheme which would give men a direct claim to a pension on having served a given number of years?—Yes, I do.

1809. The men have fixed 30 years as the maximum time upon which they would ask to be allowed to retire with a pension, without the necessity of a medical certificate?—That they should absolutely be able to claim the pension.

1810. At what period of age do yougenerally enlist your men?—We have varied very much lately in that matter.

1811. As a rule you vary between the ages of 17 and 30?—Yes.

1812. Do you consider that when a man has got to be 47 he is worn out in the service?—Not necessarily; men differ very much.

1813. Do you think that after a period of 30 years, supposing a man were 47,

Mr. W. Hamlyn. 8 May 1876.

and still a thoroughly efficient man, his love of the service and his force would keep him in the service?—I think so; I do not think that the fact of a man going away on two-thirds of his pay would be an inducement to leave; I think he would be inclined to stop for the full pay.

1814. But that they would remain in the force, and therefore you would not lose the men, who would probably be in themselves efficient officers?—Yes, quite so.

1815. What are your salaries at present, as compared with the metropolitan police forces; they are below the scale, are they not?—Yes, I believe they are; our pay is 200 *l.* per annum, with an allowance for coals, rent, and gas; the police commence at 300 *l.*, and rise 10 *l.* per annum up to 400 *l.*

1816. Those are the superintendents?—Yes.

1817. And what amounts do the allowances add to the pay in your force?—I should think about 50 *l.* per annum.

1818. So that with that addition you are still below the pay of the metropolitan police of a similar rank?—Yes, we are.

1819. The metropolitan police have the advantage of having a system of superannuation attaching to them as well?—Yes.

1820. Do you think that the present rate of wages of the force would be sufficient to attract men into it, if a scheme of superannuation were attached to it?—I think the officers' pay would not, but with regard to the younger men, I think the present rate of pay, with a superannuation scheme, would be all they desire.

1821. The complaint is not that they leave on account of the rate of wages, but that they leave on account of the uncertainty of their future being provided for?—Yes, that is the case.

1822. There are a great many questions which have been put to Captain Shaw with regard to the system of gratuities, and the feelings of the men upon that subject, and you have seen his answers to those questions, have you not?—Yes.

1823. Do you think that the force, speaking for yourself as a member of the force, endorse those opinions?—I quite concur in them.

1824. You concur in the evidence that Captain Shaw has given with regard to them?—I have read Captain Shaw's evidence, and I concur in the whole of it.

1825. Upon the question of the assistance that you obtain from the police at present, would you describe to the Committee what that amounts to when a fire occurs?—In large fires the police assist us very materially in keeping the crowd back. In fact, without their assistance for that matter we should not be able to get the engines to work at all.

1826. The police instructions, as appear by a circular circulated in the force, are to assist the brigade in every possible way; first, to get the engines to the scene of the fire; and, secondly, by keeping back the crowd to assist them to work properly?—That is so.

1827. The police in no way assist you in the actual working of your brigade?—No.

1828. Do you think you could avail yourselves more largely of the police if they were connected in some way with the brigade?—We might in large fires in laying out the appliances. When you consider that there is something like a mile of hose or more to be used at a large fire, the police might assist us with regard to that.

1829. I do not know whether you were in the room when I asked Captain Shaw with regard to the police stand-points being utilised for fire purposes; do you think that if the police had appliances given to them which they could use upon a fire before you arrived with your engines, that would materially assist you in your work?—I think that would be a good thing.

1830. In that way the police would practically co-operate with the brigade in extinguishing fires, besides the duties of policemen in keeping back the crowd and preserving order?—Quite so.

1831. Is there any point which you wish to bring before the Committee as representing the men, after having heard the evidence of Captain Shaw?—I have nothing further to add, but I should be very glad to answer any questions which might be put to me.

1832. Mr. *Ritchie.*] Do you ever find a scarcity of men at fires to the extent of preventing you from adequately coping with them?—Yes, I have found that frequently at large fires.

1833. At large fires does that scarcity occur frequently?—I should say it does very often.

1834. Has that scarcity of men at large fires ever formed the subject of complaint?—It has.

1835. Is it a constant subject of complaint on the part of the men?—The men do not grumble exactly about that, for of course that would be a case of misconduct; we do not allow them to do it, but the men think they are worked too hard.

1836. Do you think that besides the question of the superannuation fund, the excessive amount of work entailed upon the men causes them to leave the force?—Yes.

1837. You stated that your stations communicated directly or indirectly with one another; will you explain to the Committee what you meant by communicating indirectly?—I have a communication from my station to Greenwich, and then from Greenwich there is communication to Blackheath, Lewisham, and Woolwich, so that it is only indirectly that I have communication with the last three places.

1838. Would it not be very much more satisfactory if you had communication with all the stations direct?—I think that direct communication would be preferable.

1839. You stated that it would be very advisable to multiply the stations if possible, but that you could not multiply the stations with the existing number of men?—I think the first thing to do is to satisfy the existing force.

1840. You think the number of duties entailed upon the force is more than ought to be placed upon the present number of men?—That is so.

1841. You stated that in some of your stations you only have two men available. Is it the fact that very often you have only two men available?—At the outside stations very often that is the case.

1842. And that is supposing all the men to be well?—Yes.

1843. How many men have you on duty at night at the Woolwich station?—Only one.

1844. Is not that a very important station?—It is in a certain sense, but we have not had many fires there.

1845. Is it the only station available in the whole town of Woolwich?—Yes, that is the only station.

1846. And how many men have you there altogether?—Four.

1847. How many fire escapes have you?—One.

1848. Then is there to be one man on station duty?—One on station duty and one on escape duty.

1849. That leaves two available, if there are neither of them ill?—Quite so.

1850. How soon can you get assistance at Woolwich from any other stations?—The nearest station is over three miles.

1851. Then may I take it that it may be from 20 minutes to half an hour before you can get assistance from any quarter?—Yes.

1852. And that the only number of men that you have available for a fire occurring would be two?—Exactly.

1853. Do you know anything about the cases of late water or defective water supply that you have had in your district?—There are a few cases.

1854. I see that Captain Shaw reports that last year there were 32 cases altogether in which the water arrangements were unsatisfactory. I have a list here of late water at fires in the south last year in which there are 17 of those 35 cases accounted for. Is it within your knowledge to say whether 17 is the number in the southern district?—I think quite that.

1855. In all the 32 cases there are more than one-half in the southern districts?—Yes.

1856. Do you know that, on 15th February 1875, there was a fire at Lewisham, at which you got no water?—I do not recollect any large fire at Lewisham at all. There was a haystack which was reported, and they got water from a pond; that is the only one which I can recollect. That was in the neighbourhood of Brockley.

Mr. W. Hamlyn. 8 May 1876.

1857. Do you recollect one in South-street, Greenwich?—I do not.

1858. Do you remember one on 17th December, at Clapham, in which the water was 35 minutes late?—I do not know that; I was not aware I was going to be asked about it.

1859. However, you think that out of 32 cases in which the water arrangements were unsatisfactory in 1875, I am quite within the mark when I put the number at 17?—Yes.

1860. Is not there a volunteer fire brigade in your district?—There are several.

1861. How many are there?—There are four, I think.

1862. Do you receive much assistance from them?—No.

1863. Do you give them any information of a fire occurring?—No.

1864. You have no means of communicating with them?—No.

1865. There is one brigade there, which is really a strong brigade, is there not?—The South Metropolitan Brigade have two stations within the metropolitan area.

1866. Of how many engines?—Three.

1867. How many of those are steam engines?—There is one steam engine.

1868. Have you ever received material assistance from them?—They have assisted us on several occasions; but we have not had anything very material in their immediate neighbourhood.

1869. Have there not been occasions on which they have arrived at a fire before you have?—Yes, there have.

1870. And rendered assistance before you could get to the fire?—Yes.

1871. I do not impute any want of haste to you, but it was because they were nearer the fire then you were?—Yes, the fire was close to their station.

1872. Where are those four stations?—There is one at Clapham, one at Streatham, one at Sussex-road, Brixton, and one at Forest-hill,

1873. Do you know how many men there are altogether in them?—I think there are very few regular men; the South Metropolitan Brigade have three or four men, I think.

1874. Mr. *Onslow.*] I suppose those volunteer fire engines go to a great distance in the case of a fire?—Yes, they go about a good deal.

1875. And when they are working with your men they work in perfect harmony with each other?—Yes.

1876. They have some one there who takes charge of them; no one connected with your force has anything to say to them, I presume?—They put their services at our disposal.

1877. Is that always the case?—Yes.

1878. Have you any knowledge how many men you have enlisted at the earliest age of 17 within the last five years?—I have no knowledge of that.

1879. A record is kept of the age at which men are enlisted, is it not?—I do not know anything of that record at all.

1880. In large fires the public very often assist you materially in laying down the hose, and working the engines, do they not?—Yes, they have done so.

1881. I should like to ask you about the sailors; you have had a good deal of experience, I suppose, in recruiting the men for the fire brigade; is it your opinion that sailors upon the whole are the best men for the work in London?—I think on the whole sailors are the most suitable.

1882. Captain Shaw stated that it takes certainly a year to train a man for your service. If you took other men into your service besides sailors at the early age of 17 to 20, would it take longer than a year to train them?—The probability is that it would, but it greatly depends upon the men themselves; some are much more intelligent than others.

1883. A man would be medically examined, and he would probably be an athletic man. Now you are of opinion that if you recruited from other trades besides sailors you could get younger men, considering that at that age those men are generally at sea?—I think we could.

1884. And it would take the same time to train them?—I think it would take longer.

1885. Sir *Henry Peek.*] You never leave the station yourself, I suppose?—Only by leave of the chief officer, and when I visit; I have to visit my stations.

1886. But Captain Shaw told the Committee that you were so short of men that the officers had to take their turn at the rank and file duty?—That does sometimes happen.

1887. Do you often visit your stations?—Yes; sometimes twice a week; sometimes more.

1888. And you make a report to Captain Shaw once a week?—I make a report every day to Captain Shaw.

1889. Do you periodically report to Captain Shaw upon the stations and the horses, and the general condition of your stations?—Twice every day.

1890. Sir *James Hogg.*] You stated just now, that the distribution of the stations and all that, as far as it went, was very satisfactory?—Yes, it is.

1891. Can you suggest where there ought to be stations; where there are not stations now. Plumstead was one place suggested; can you tell me another?—It would be very well to have one at New Cross.

1892. How far is New Cross from the nearest station?—One mile and a quarter.

1893. Have you heard any complaint at a fire in your district with regard to the non-arrival of the engines in time?—None at all.

1894. Then, consequently, I may deduce from that, that you are tolerably near to the scene of the fires?—People have been satisfied so far as I have heard.

1895. Although some of the parts of the district are a mile from a station; yet your district is not a thickly populated district?—That is so.

1896. And, consequently, in that district you would not require so many stations as in the thickly populated districts of London?—Certainly not.

1897. You stated that the men were sometimes on duty for 13 or 14 hours during the past month. Would you let the Committee know what the duty of a fireman is during the day. He rises at what hour in the morning?—It varies considerably. I very often rise at five myself.

1898. What duties do they commence with?—They commence with cleaning the station at 7 o'clock.

1899. How much do they do?—It depends upon whether there has been a fire on the previous night or not.

1900. How long would it take to clean the station?—It would take up to 12 or 1 o'clock in the day, perhaps.

1901. That includes cleaning the engine?—Yes, it does.

1902. Then the men get their dinner?—Yes.

1903. Then after dinner what do the men do?—They lie down. There may be some chimneys on fire in the afternoon.

1904. But I am talking about the station duties; after that the men wait for a fire?—Yes.

1905. So that out of the 13 or 14 hours duty, their duties, after the morning, would be waiting at a station, reading or writing, or anything they liked to do; waiting for a fire, in fact?—Yes.

1906. It is very often the case, is it not?—It is.

1907. In the outlying districts, where you tell the Committee there are only two or three men, is it not very often the fact that there is not a call to a fire within a week?—Not an actual call; or there may be.

1908. Do not you know that there are many parts where there is not a call in a week?—Yes, there are stations where there has not been a call in a week.

1909. Then the men located there could not complain very much of hard work?—The men complain of the hours of duty.

1910. But it is not very hard work if it is done by 1 o'clock?—But a man is up in his clothes perhaps 20 hours out of the 24, so as to be ready to go away in case of fire.

1911. At all events, if a man is not called out, the work of standing in a station is not very hard?—It is not so laborious.

1912. Mr. Ritchie asked you a question about the scarcity of men, and you said the men complained of excessive work; can you tell me how often that has happened?—The men have been complaining now for some years past.

1913. What is the last date of a complaint?—I have a return here from one station in my district last year. One man said he was on duty five nights and two days; from 7 a.m. on the 29th April to 7 a.m. on the 4th May.

Mr. *W. Hamlyn.*

8 May 1876.

1914. One part of these duties would be what you have just been explaining, namely, passing the day in the station?—He would be on duty at the station, or on duty at the escape.

1915. At the escape a man can lie down, can he not?—Yes.

1916. He has a sort of tressel bed, has he not?—There is a seat in the box.

1917. And a blanket?—Yes.

1918. And the men very often pass the night quite undisturbed, excepting so far as the fact of their having their clothes on goes, and being disturbed by the visit of their officers?—Yes.

1919. So that this duty might be said, a great deal of it, to be passed in the station; not exertional duty?—If it was exertional duty the men could not do it.

1920. I think you stated that it is only now and then at fires that the officers do the work of the men?—At all large fires they do.

1921. Now and then?—Large fires only happen now and then.

1922. But surely the officers who have to direct have not to pull out the hose, and do all that?—I have had to do it myself.

1923. But you stated that those cases were exceptional?—They are exceptional, inasmuch as large fires are exceptional.

1924. Do you mean to say if you went to a large fire you would have to pull out the hose?—Probably I might.

1925. I thought you stated that the police did it?—So they do.

1926. Would it not be better for you to tell the police to do it?—When you are at a given point and you see that help is wanted you are tempted to do it.

1927. Then I suppose it is your superabundant energy which induces you to do it?—No doubt. I do not want to say it with any flattery to myself.

1928. You told the Committee that it was quite exceptional that officers had to do that work?—Yes, inasmuch as large fires are exceptional.

1929. You stated just now that the best thing would be to satisfy the existing force; what would satisfy, the existing force completely?—A superannuation scheme is the most important requisite.

1930. Will you kindly explain your views with regard to the superannuation scheme, because I do not think the Committee quite understand what you are saying; the men pay a certain sum of money now per week, do they not?—Yes.

1931. And if they leave they get that back with interest?—Yes.

1932. That was called at some time or other a superannuation scheme, but it is not so?—It was a superannuation scheme until the Board altered it into a saving fund.

1933. I suppose what you think would satisfy the men is a pension?—Yes, some definite scheme of pension.

1934. Might I ask you, do you endorse the opinion of Captain Shaw that the men all through from yourself downwards would be happy to subscribe 2½ per cent. of their pay towards a pension fund?—I think the men would have no objection to subscribing 2½ per cent. of their pay towards a pension fund.

1935. If the other matters were arranged?—Yes, if the other matters were arranged.

1936. Then with regard to the period of 60 years; are you not aware that in most pension schemes; in the police, the country police, and the London police, the pension is always at 60 years?—I believe it is at the present time in the metropolitan police; but I also know as a fact that they are constantly grumbling about it, and that they are seriously affected in consequence of the matter not being more liberally settled.

1937. You think that a man should be allowed to go away at 46 or 47 years of age, after he has served his 25 years?—I do not think he would want to go away.

1938. But you think he should be allowed to go away?—I think there should be that provision in the case of a man being incapacitated being allowed to go.

1939. But take a man in the full possession of his faculties, should he be allowed to go away at that age?—I do not think he would want to go; but if he did want to go, I think he should be induced, if possible, to stop longer.

1940. Is there anything further that you would like to tell the Committee about the pension fund?—The only other thing I have to ask you is that the salaries

salaries of the superintendents should be made more in accordance with those of the police.

1941. You think that they should be put more upon the scale of the police?—I think their duties are quite as onerous, and that they have quite as hard work. I have a large staff of men and engines to look after.

1942. You think that if the superintendents had an increase of pay, and this pension scheme were adopted, the men would be perfectly satisfied with the existing pay?—Yes, I do.

1943. And that with the few extra men that Captain Shaw shadowed forth, you think the brigade would work satisfactorily?—I think so.

1944. And would work very comfortably all through your district?—Yes.

1945. Mr. *Hayter.*] How do you summon the men who live at the stations?—The man on duty at the station has to run to the house they are living in.

1946. Some of them are a considerable distance off, are they not?—We get them as near as we possibly can.

1947. With regard to being on duty, a man cannot take off his belt or his boots, can he?—No; he is dressed entirely fit to go out with the engine.

1948. It is the confinement the men complain of, is it not?—A fireman cannot get away as a policeman can do.

1949. Then, if you have so few men, you have no men to fill up vacancies in case one of the men fell ill?—No, his place cannot be supplied by the man at the station.

1950. Mr. *John Hardy.*] Good men leaving the Metropolitan Fire Brigade have no difficulty in getting good places elsewhere, have they?—I do not think so.

1951. Would not the result of allowing the men a too early superannuation be, that they would leave at that age, and get good places elsewhere?—The men who leave us are not the eldest.

1952. But do not you think that a man who would be entitled to get two-thirds of his pay on leaving, in the entire possession of his faculties, would be likely to go elsewhere when he had got his two-thirds?—I do not think so. What a man can do between 20 and 30, and what a man can do between 40 50, are quite different things.

1953. But if he were an efficient man he would be able to get a place in a fire brigade elsewhere, would he not?—I do not think people who know anything about fire brigades would be likely to employ men about 50 years of age.

1954. Do not you think he would be able to get any other kind of employment?—I do not say that he would not get any employment, but not in any fire brigade.

1955. Mr. *Hardcastle.*] It has been stated that men were on duty seven days, that they worked continuously, and that they were not allowed to be off on leave with the exception of 14 days in the year; is that the case?—I get the 14 days, but many others do not get more than three or four days.

1956. Do they never get in turn a Sunday off?—Never.

1957. Do they only get it by application?—They have to make special application.

1958. Is that application frequently granted?—As often as it can be.

1959. Would that be as frequent as one Sunday in three or four?—We could not guarantee anything of that kind.

1960. Is that one of the particular hardships of the service?—Yes, the men generally think that they do not get away sufficiently.

1961. Mr. *M'Lagan.*] I understand that part of your scheme is, that no efficient man would be allowed to leave the service, even though he should have served the time, without a doctor's certificate?—I think it is understood that after 30 years a man should be allowed to claim his pension under any circumstances.

1962. But after 25 years, a man would not be allowed to claim his pension without a doctor's certificate?—No.

1963. Then if a man entered at 20 years, after 30 years' service he would be 50, at least?—Yes.

1964. Of course you cannot call him an able-bodied man, as compared with a man between 20 and 25?—No, it would be very different indeed.

1965. Sir *William Fraser.*] Do you happen to know whether the firemen employed

Mr. *W. Hamlyn.*

3 May 1876.

employed in theatres and places of amusement are persons trained with a knowledge of protection against fire?—Some of the persons are persons who have been trained in our brigade at some previous time.

1966. I understood from Captain Shaw that that was very rarely, if ever, the case; can you tell me to what extent men are employed, for instance, at a large number of the London theatres, who have been employed in your brigade?—I know some cases where there is one.

1967. What is the largest number of men employed, as far as you are aware, who have served in your brigade?—I should not think more than three in any theatre.

1968. Is there anyone in a theatre who, from his position and skill, can ensure obedience in the case of a fire breaking out?—I cannot answer that question.

1969. Are there not men in theatres dressed in a dress closely resembling your brigade who are not at this moment connected with it?—There are.

1970. Do you think that in the case of a fire at a theatre beginning, for instance, at the top part of the scenery, or any part catching fire that was not accessible, and that that fire burnt during 10 minutes' start, the present organisation of the persons in the theatre, and the means within the theatre, would afford much chance of putting it out?—I do not think they would.

1971. Mr. *M'Lagan.*] I have observed a man in Spiers and Pond's Criterion dressed in your uniform; does he not belong to your brigade?—No.

1972. *Chairman.*] I suppose what the men really represent to you is their wish for a superannuation, and you are desirous that the force should be sufficiently increased to enable them to have watches of duty similar to those in the Metropolitan Police Force, and other forces of that kind?—Those are the two most important points with them.

Thursday, 11*th May* 1876.

MEMBERS PRESENT:

Mr. Clifton.	Sir Andrew Lusk.
Mr. Forsyth.	Mr. Onslow.
Mr. Hankey.	Sir Henry Peek.
Mr. Hardcastle.	Mr. Ritchie.
Mr. John Stewart Hardy.	Sir Henry Selwin-Ibbetson.
Mr. Hayter.	Mr. Stevenson.
Sir James Hogg.	Marquis of Tavistock.
Mr. Locke.	

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

William Port, called in; and Examined.

W. Port.
11 May 1876.

1973. *Chairman.*] YOU are a First-class Engineer in the Fire Brigade?—I am.

1974. What division are you attached to?—The D Division.

1975. Did you hear the evidence given by Captain Shaw in this room, or have you read the evidence since?—I heard a portion of his evidence; the other portion I have read.

1976. Have you read the evidence of Mr. Hamlyn, the superintendent of your division?—I have.

1977. Generally speaking, do you agree with Captain Shaw in the evidence he gave as regards the superannuation question?—I agree with him in every way.

1978. From your own personal knowledge of the men in the brigade, you believe that a superannuation fund, that is to say, a fund which provides pensions for men when superannuated after a certain period of age, or provides gratuities or pensions for men before that period, on medical certificate, would tend to strengthen your force, and retain in the force efficient members of it?—Undoubtedly.

1979. Do you think that that end would be equally attained by a direct increase in the rate of wages of the men, instead of a fund of that description?—No; I think a superannuation fund would be best.

1980. Is that opinion founded on the reason that the superannuation fund is one which the men look forward to as a provision afterwards, and to obtain which they would continue to remain in the force, whereas a direct increase of wages practically does not alter their position, and would not prevent a man leaving the force for an accidental offer of a position which he thought more to his interest at the moment?—I think the best thing, and that which would suit all our purposes, would be to establish a superannuation fund; I think that would meet our wants better than an increase of wages.

1981. What I meant by my question was that a direct increase of wages, though it may benefit a man absolutely for the moment in the amount of money he has to spend, does not diminish his motives for leaving if any inducement is put before him, in the same way as it would be diminished if he lost by that leaving a future prospect, such as a superannuation fund would afford?—I think that a superannuation fund would be the means of our keeping our men; I do not think we should lose the men in the manner we do now if a superannuation fund was established.

W. Port.

11 May 1876.

1982. And I understand that in agreeing with Captain Shaw and Mr. Hamlyn in their evidence, you agree with the plan that the force have represented for that superannuation fund in lieu of the plan suggested by the Metropolitan Board of Works?—I entirely agree with them.

1983. That is to say, that after 30 years of actual service you think a man should be entitled, if a good-conduct man, to claim a retiring pension?—Yes.

1984. Do you think that his having that power of claiming a pension as a right, after he had been 30 years in the service, would of necessity lead to men leaving, or would they remain on in the force as long as they were able-bodied, and could do their work?—I believe that the men would remain in the force.

1985. So that you would not by establishing a superannuation fund lose the services of men who, perhaps, from their long knowledge and experience were your best men?—No.

1986. You think that the full receipt of wage, with the knowledge that they could take their pension on leaving, would practically retain the men in the force as long as they were efficient?—I think so.

1987. Do you agree with the evidence given with regard to the pay, in which the men suggest they are overworked at present. The men, as you are probably aware, have signed a memorial to the effect that the work is very heavy?—I agree with that.

1988. What is your experience of the length of work on duty?—I have a return for the month of March, which was a very light month, and I find that the men at my station averaged 14 hours a day, taking them all round; but that is only the duty that is recorded to them There is an account kept of that; it is all accounted for in our occurrence book, but at my own station I often have to call men in to assist with the telegraph when we are busy. For instance, I have only two men on duty at my station; I have often to call other men in. There are perhaps three, or four, or five instruments working at one time, and it is necessary for me to call men in who are off duty to assist with the telegraph.

1989. Is a man obliged to be within call, so that you can get him at any moment?—Always. The only time he can get away is when he is on leave or sick.

1990. A man must, even though off duty, be ready to answer any call that may be made?—Yes, quite so; he must be ready to answer any call.

1991. So that, though the men had 14 hours of duty a day in that month, it might have happened that by press of business they were even harder worked than that?—Yes.

1992. What station are you in command of in the D District?—I am in command of the station at Kennington-lane.

1993. What number of men have you at that station?—Ten altogether.

1994. How many fire-escapes are there?—Three.

1995. And how many men do you average on duty at night?—There are always five men on duty at night. One at each escape, that makes three, and two men at the station.

1996. And upon a call of fire how many men are available at your station?—There are five men available to go with the engine.

1997. Do your men all lodge in your station?—No.

1998. How many men lodge out?—One man lodges out.

1999. In your opinion, ought the men all to be lodged within the station for the convenience of working it?—Decidedly; I might mention that although we have only one man sleeping out of the station I have recently lost two good men. I tried very hard to get apartments for them near the station.

2000. Do you mean that those were men who had been in your force for some time?—Yes; they were men who got married. They had been in the force some time, and they had been in my station some time, and were thoroughly used to the work. They made an application to get married, in each case, about a month before the time came. I tried very hard to get lodgings for them, but they had to live in the station as single men for some time before we could find apartments for them somewhere else. Their wives were living out

out. They had, of course, to find apartments for their wives away from the station.

2001. As soon as a man is married you have to find apartments for him?—We have to find accommodation for him the best way we can. It happened so that we could not find apartments for these men.

2002. I suppose it would be difficult to bring married men into residents on the spot?—As our stations are situated at the present time it would be impossible. We have not room for the married men at the station I am at now.

2003. What number of married men can you put up at your station?—We have three married men, besides the superintendent.

2004. In saying that you tried to keep the men, do you mean to say that, failing to find accommodation, they had to leave the force?—No; they had to shift to another station. Those men had been with me a considerable time. Of course, a superintendent's station is a very important station. For instance, there are 12 telegraph instruments at the station that I am at, and those 12 instruments control 18 stations. Those men were thoroughly used to their work, and in consequence of not getting apartments at the station I lost their services, and they went away to a smaller station.

2005. Is the number of married men's lodgings at your station about equal to the number in other stations in your district?—It is about the same I should think.

2006. You have a proportion of your men whom you can put up as married men throughout your district at the stations, have you not?—Yes.

2007. What number of men would you require at your station, in your opinion, so as to give the men an occasional leave, such as has been suggested by Captain Shaw?—We should require six more men and another officer.

2008. I am asking you because I want to find out what number of men at a superintendent's station would really give practical relief to the men on duty. How would you distribute those men, so as to produce that relief?—I would keep the whole of the men at the station, in the same way as now. It would take a very large increase to keep a certain number of men off and on. I do not think you would be able to do that without a very large increase indeed.

2009. I think it was suggested in one of the representations made by Captain Shaw that one night off duty a week would be a great relief to the men. Are you not able to get that at present?—No, we can never depend upon it.

2010. Would it require that increase to the staff at your station, which you have mentioned, to get that amount of relief?—If we had that increase it would give it us.

2011. That would give you a night off duty each week for each man?—Yes.

2012 You are in command, I suppose, of the station, and therefore, as a general rule, you are not out with the engine?—I always go with the engine whenever it goes to a fire.

2013. Leaving a man in charge of the station in your absence?—We leave two men if we can manage it; it is necessary to leave two.

2014. And when you are away at a fire with the engine, can those two men work the appliances at your station in case of a call being made to another fire?—No; it is necessary to leave them to keep up the communication.

2015. As soon as your engine had gone away, what would they do supposing another call came to the station, in answer to that communication?—One man would have to go, and the other would stop at home. They must do the best they could.

2016. One man could not get away with the engine, could he?—He would be of very little use. He would have to drive the engine himself.

2017. Would he be able to get assistance from the other stations, or would it be better to get assistance direct at the spot from the other engines?—To get it at the spot.

2018. When you are out on duty, therefore, the station is powerless to deal with any other fire which may occur at the same time?—It would not be exactly powerless. One man would have to go with the engine, and the other man would have to stop at home to keep up the communication.

W. Port.

11 May 1876.

2019. And the man with the engine would have to trust to outside aid to work the engine?—Yes.

2020. Have you met with any great deficiency in the water supply during the last two years, to your knowledge?—No.

2021. The supply has always been readily got at when you have arrived at a fire; is that so?—We have been short of water upon some occasions, but not to a very great extent. It has only been at the first of a fire.

2022. Not to such an extent as to prevent your being of use when you arrived at the fire with your engines?—Not during the last year.

2023. Are all of your men able to work the plugs?—We can always start a plug. We have the appliances for starting the plugs.

2024. Do you find any difficulty in doing so from a want of knowledge of the mains and service-pipes being charged or otherwise?—We generally know where to find the plugs, and we know how to start them, but it does occur sometimes that, upon turning the cocks, we do not get the water.

2025. Have you found the difficulty in the last year at all?—We have not found that difficulty in the last year at all.

2026. But there is this difficulty, that you are not acquainted with the exact condition of the pipes with reference to pressure, and that you cannot always be certain yourselves of getting a supply?—I had a case about two years ago where we started five plugs, and could not get any water; but as soon as the turncock arrived we got it. He knew the cock to turn on to supply us.

2027. Are the turncocks generally at hand when they are wanted?—Yes, they are.

2028. I suppose there may arise a difficulty in getting a turncock upon the spot, from his being out upon a round of duty, which takes him away at the hour of being called?—That occurs sometimes, but very seldom.

2029. As I understand, the turncocks are not on their round of duty at night, so that you can always get at them at that time if a fire occurs at night?—Yes.

2030. Would a system, in your opinion, by which stand-pipes could be inserted in the mains, be any use to you?—I think that would be of great assistance.

2031. Do you think that that would be preferable to the present system of plugs?—Yes, I do.

2032. Have you anything else which you wish to state to the Committee, because if you indorse all that has been said by Captain Shaw, I need not detain you any longer, unless you can suggest something which you would like to place before the Committee?—No, I have no suggestions to make; but anything that the Committee wish to ask me I shall be very glad to answer.

2033. Mr. *Ritchie.*] You said that you had two men left at home at your station when you sent men out with the engine?—Yes.

2034. Is that the case with all the stations in the D District?—No.

2035. That only refers to the superintendent's station?—That only refers to the superintendent's station; my own station.

2036. Is yours the only superintendent's station in the D Division?—Yes.

2037. At all the other stations in your district, I infer from what you say, when men are sent out with the engine, only one man is left at home?—In most cases, that is so. Sometimes the station is shut up when the engine is out.

2038. Do you know as a fact that that occurs often in your district?—It occurred the day before yesterday, at Woolwich.

2039. How many men have you at Woolwich?—Four.

2040. And you have an escape, I suppose?—We have one escape.

2041. And one man on station duty?—Yes.

2042. That leaves two for the engine?—Yes, it does.

2043. Can you ever send out an engine with more than two men at night?—Not from Woolwich.

2044. How was it that you closed the station; were there two fires at once?—It happened that the officer was away on business, and one of the men was called for at the superintendent's station. A fire happened while the men were away, and that left the two men to ride with the engine.

2045. How

2045. How far are you from any assistance at Woolwich?—Blackheath, I think, would be the nearest station.

2046. How far is that?—I cannot tell you exactly.

2047. Is it three miles?—It is about three miles.

2048. That is the nearest assistance you can get?—Yes.

2049. Do you know how long that station remained closed?—I cannot tell you off-hand.

2050. Where was the fire?—At East Wickham.

2051. How far is that from the station?—About 3½ miles.

2052. The engine went there and stayed there until the fire was out?—Yes.

2053. And during all that time the station was closed?—The station was not closed during the whole time; the men were sent home as quickly as possible, but for a portion of the time the station was closed.

2054. The men were sent home I suppose after their services were no longer required at the fire?—Yes, the men who were sent with the engine returned with it, and the other men were ordered home as quickly as possible.

2055. Do you refer to the men in charge of the fire-escapes?—No, this was in the day-time.

2056. Supposing a fire had occurred in Woolwich town while the men were away, what would have been the result?—That would have been telegaphed to our nearest station.

2057. Where is your nearest station?—At Blackheath.

2058. Were not the engines from Blackheath also at this fire?—No, they were not.

2059. They were ready to come, were they not, in case they were wanted?—They were ready to come in case they were wanted.

2060. But of course being so far away, three miles from Woolwich town, I suppose the engines could not possibly have come in less than half an hour?—We did not send any more assistance, because we did not think it was required; we were called to a barn.

2061. What I wanted to know was, what would have been the course followed, supposing a fire had taken place at Woolwich, when the station was closed; you would have had no means of communicating with the Blackheath station, would you?—Not until a man had arrived home at the station.

2062. If a fire had taken place at Woolwich would a man have had to be sent off in a cab to Blackheath, or some other station?—The police would telegraph to Scotland Yard, and Scotland Yard would telegraph to Watling-street.

2063. Then you mean to say that the course to be adopted would be, that the police at Woolwich would telegraph to Scotland Yard, and Scotland Yard would telegraph to Watling-street, and Watling street to Blackheath?—Watling-street to Kennington, and Kennington to Blackheath.

2064. Of course, if all the police-stations were in communication with the fire-escape stations, you would get assistance very much more rapidly?—No doubt.

2065. You think it would be a very good thing to have communication between the police-stations and the fire-escape stations, do you not?—I think that would be a very good thing.

2066. How many fire-escapes have you in the southern district?—Twenty-seven.

2067. How far are they placed apart?—Some stations are very close; about from half to three-quarters of a mile, and some are further.

2068. What is the greatest distance between any two fire-escapes?—I think the farthest would be from Kennington-cross to Wandsworth.

2069. How far is that?—About five miles.

2070. That is to say, five miles between two fire-escapes?—Yes, taking that line. There is one at Clapham, but, taking it in a straight line from Kennington-cross to Wandsworth, it is about five miles.

2071. But where an escape has to be brought even two miles, I suppose it is practically useless, is it not?—As far as saving life is concerned.

2072. If an escape is to be brought two, or three, or four miles, for saving life, it is utterly useless?—Yes, we should never run it that distance.

2073. Then, in point of fact, if a fire were taking place in the middle of the

W. Port.

11 May 1876.

distance, between those two points, whatever number of lives were endangered, you would not be able to make use of the fire-escape?—We have a fire-escape at Clapham, and if it were wanted for the Wandsworth-road, or anywhere about there, we should run it.

2074. I am anxious to know whether you can tell me what is the greatest distance between any two fire-escapes?—Taking the greatest distance from one to the other, I should think about two miles.

2075. If a fire were occurring between those two, you would have to bring the escape at least a mile?—Yes.

2076. How long would it take to bring up a fire-escape?—It would depend upon the assistance and the road entirely.

2077. Is it your opinion that you ought to have more fire-escapes in the D District?—Decidedly so.

2078. You have not formed any idea with reference to how many more would be required in that district?—I have not.

2079. What is the greatest distance that you think ought to exist between any two fire-escapes?—I do not think that the distance should exceed half-a-mile.

2080. However, seeing that your present brigade is, according to your idea, considerably overworked, it would be quite out of the question to establish more fire-escapes with the present number of men?—Quite so.

2081. You are a first-class engineer, are you not?—I am.

2082. But the first-class engineers are not all at the superintendent's stations?—They are not.

2083. But you are at a superintendent's station, are you not?—I am.

2084. What are your duties?—My duties are to assist the superintendent, draw up reports, and keep accounts.

2085. Have you more duties to perform than an ordinary first-class engineer at an ordinary station?—It is a different thing altogether; I draw all the moneys for the other stations in the district; I have to account for that money, and all the stores I have to write for, and to account for, and make all payments. I suppose they amount upon a rough calculation to about 1,000 *l.* a year, and they vary from 1 *l.* to 2 *d.*

2086. How many first-class engineers have to perform duties which you have to perform?—Four.

2087. That is one in each district?—Yes, one in each district.

2088. Do you receive higher pay than an ordinary first-class engineer?—Yes, I receive 6 *d.* per day extra for what I have to do.

2089. Have you any complaint to make with regard to your scale of pay?—Decidedly.

2090. What complaint have you to make?—Our position has always been considered as equal to that of a chief inspector of police; I think our pay ought to be the same as theirs; and it may be argued that we have our coals, house rent, and light found us, but I think that that is only a fair remuneration for the extra duties which we have to perform; for instance, we are completely tied to the station; we have no one to assist us, and the only time that we are away from the station is when we are on leave.

2091. What do you estimate the value of your coals, house rent, and gas per week?—I think the value has been estimated by the Metropolitan Board of Works at 15 *s.* a week; I omitted to state to the Committee that we have to report all damages in connection with fires, and we have to keep records, draw up statistics and returns for everything which is connected with the district in any way; in fact, in the absence of the superintendent we have to take the command, and to do the same as he would do, and we have to assist him in every way.

2092. What is your pay?—£. 2. 12 *s.* a week.

2093. And the coals, and house rent, and gas is estimated at 15 *s.*?—Yes.

2094. Taking that estimate as correct, the pay would really come to 3 *l.* 7 *s.* a week?—Yes.

2095. And what corresponding rank do you consider you hold with regard to the police?—That of a chief inspector of police.

2096. You think you occupy a position analogous to that of a chief inspector of police?—Exactly.

2097. Do you know what is the pay of a chief inspector of police?—His pay is 3*l.* 13*s.* a week, but then he gets a portion of his time off; he is not continually at the station as I am; a chief inspector of police has a certain number of hours upon duty, and a certain number of hours off duty. Then he has only men under his control during his hours of duty, whereas our men are continually under our eyes.

2098. But in asking you what corresponding rank you consider you hold to that of the police, when you state that of chief inspector of police, do you mean to say with respect to any complaint as to your pay that the first-class engineers, in the position in which you are, would be satisfied with the pay of the corresponding rank in the police?—I think they would.

2099. They would be satisfied with 3*l.* 13*s.* a week?—I think they would.

2100. Your pay, taking coals, house rent, and gas, is 3*l.* 7*s.*?—Yes.

2101. So that a rise of 6*s.* a week would satisfy you, would it?—I think we ought to be allowed something for the tie we are under.

2102. But suppose the brigade were increased by the number which you think is necessary to have at your station, that would give you some little time?—If you would give us the men, and the increase of pay, we would be satisfied.

2103. If you had a sufficient number of men to enable you to get a time off duty for yourself, you would be satisfied with a rise of 6*s.* a week?—Yes, I would.

2104. Do you believe that all the first-class engineers in your position would be prepared to say the same thing?—Yes.

2105. With regard to the pension and superannuation scheme which Captain Shaw has suggested, are you, from your knowledge, prepared to say that many officers would be willing to contribute 2½ per cent. to the superannuation fund?—I am prepared to say so.

2106. Mr. *Onslow.*] You say that this 15*s.* a week is the calculation of the Board of Works of the value of your allowances; I should like to ask you whether you agree with that calculation?—I think it is a very fair calculation.

2107. At what age did you enlist?—I enlisted at the age of 20.

2108. How long have you been in the force?—Nearly 18 years.

2109. Would a policeman get to the rank of chief inspector in 18 years?—I think so. I am not prepared to answer that question.

2110. How many years were you in the force before you obtained your present position?—I have held my present position about eight years.

2111. And it took you 10 years to get to the rank which you now occupy?—Yes.

2112. You say that you do not know how long it would take a policeman to get to the rank of chief inspector?—I cannot say; I think they rise a good deal by merit.

2113. You have no idea whether it would be 10 years, or more?—No. I am acquainted with some chief inspectors of police, and they are about the same age as myself.

2114. Can you tell me how many of the recruits you have had last year were of the age of 17?—I cannot say.

2115. Do you get many of that age?—I cannot say. I have nothing to do with the recruits.

2116. If so many men leave the force, I presume the brigade must be somewhat unpopular?—No, I do not think the brigade is unpopular.

2117. If it is not unpopular, it must be popular?—I think it is popular, that is as far as regards the men in it.

2118. But still the men leave?—Yes, the men leave.

2119. Do they leave in large numbers?—Yes.

2120. That is to say, that those men leave a popular service in large numbers; how do you account for that?—I think it is principally because there is no superannuation fund established.

2121. You say "principally"; is there any other reason?—The number of hours duty, and the tie that the men are under.

2122. I suppose young athletic men do not like the confinement?—No, the confinement is very great for young men.

2123. Still,

W. Port.
11 May 1876.

2123. Still, according to your account, there appear to be many reasons why the service should be unpopular, but you tell me that it is popular?—As far as our own men are concerned I think the service is popular, and I do not think we should lose those men if the superannuation fund was established, and if we had an increase of men, so that the men could get away more.

2124. Practically, your men have very little time indeed to get away to see their relatives even in other parts of London?—Very little.

2125. Still the men seem to have plenty of time to get married?—I think that a man when he leaves the sea generally thinks about some situation where he can settle down to get married.

2126. How many men do you think ought always to be with an engine to work it efficiently in case of fire?—I should say not under four.

2127. That is to say, four with a manual engine?—Yes.

2128. And how many with a steamer?—Six men with a steamer.

2129. Would that number include the driver?—No, it would have nothing to do with the coachman.

2130. It is very essential, is it not, at the first outbreak of a fire, that your engine should be thoroughly well manned?—Yes, it is.

2131. Can you give the Committee any instances which you know of where a fire has been attributed to your being short-handed at the time of the arrival of the engine at that particular fire?—Yes.

2132. Do you think that there have been instances of that?—Yes.

2133. Have there been many instances?—I can speak of one off-hand; Peek Frean's, at Dock Head.

2134. How long ago was that fire?—Three years ago, I suppose; I cannot say exactly, but, roughly speaking, it was about three years ago.

2135. You see the importance of this question. Can you give the Committee any idea how soon from your experience that fire would have been got under if you had been properly manned at the first start?—I do not think the fire would have been got under sooner, but I think we could have stopped it from extending so far at that time. It was low water, and we had a very long way to get the hose from the float.

2136. At all events I may gather from that that you think there have been several instances of aggravation of fires owing to the paucity of the number of those working the engines?—Yes, I could mention several cases, no doubt, but I am not prepared to say how many.

2137. Could you give the Committee a reliable list on some future day of cases in which greater damage has been caused on account of the few men you have had to work upon the engines?—I might, perhaps, give it now; the fire at Peek Frean's was upon the 23rd of April 1873.

2138. How many men were working at that fire?—I cannot tell you how many men were working at that fire, but it was a very large fire.

2139. Do you recollect how long it took before the first engine arrived after the outbreak of the fire?—The first engine would arrive very quickly. Tooley-street Station is not a very long way from it, but it was a very large fire; the place was well on fire before anything came.

2140. Do you know how many men were upon that Tooley-street engine?—I cannot tell you now, but I know when we arrived that we were very short of men.

2141. Where did you come from?—Kennington.

2142. How many men had you there?—I could not tell you the number; the fire covered a very large space of ground.

2143. But how many men were there upon your particular engine?—I cannot tell you how many men we had with our particular engine; I am speaking of the fire generally.

2144. At all events, speaking generally, you were undermanned?—We are always so in the case of a large fire.

2145. Yours being the D District, in what portion of your district is the worst supply of water?—I should say Rotherhithe-street has the worst supply of water.

2146. In your experience what has been the greatest time before the water has been available?—The water was available there at once for what we had, but the pipes are very small I believe in that particular neighbourhood. The water was available for one engine in the part I am speaking of, and only one,

and

and we could not work more than one engine from that particular plug; that plug happens to be at the extreme end of the water company's district.

2147. Still it is a very populous part of London, is it not?—Yes, it is.

2148. And was this a main or service pipe from which you could only work one engine?—It must have been a service pipe, I think.

2149. With regard to this fire which you speak of at Woolwich the other day, was that a large or a small fire?—It was a small fire.

2150. There is no doubt that if a large fire had arisen in the town of Woolwich, an enormous amount of damage might have arisen on account of your station being closed upon that particular day?—It would have caused delay in getting assistance there, as far as we are concerned.

2151. But you say that telegraphic communication would first have gone to Scotland Yard, and then to Watling-street, and then to some other station?—I am not sure that it would have gone that way, but that is the only way in which we could have got the information, that I know of.

2152. That would have taken a very long time, would it not?—I do not think so.

2153. How long would it take, do you think?—We might get the information I think in 10 minutes, from the time the information started from the police-station, so that we could start another engine.

2154. But if that station was shut up, the nearest station to it is two miles off?—Yes; Blackheath would be the nearest.

2155. Then, from the first time that the information was given about the fire, how long would it take if your engine station was shut up before another engine could be upon the spot at Woolwich?—I should think about 20 minutes.

2156. That would be two engines; how long would it be before another engine came?—The Greenwich engine would be there almost directly.

2157. Practically, you think that two engines might be at work under a half-hour?—Yes.

2158. Have you ever made any calculation what it would cost, supposing you had fire-escapes throughout London only half-a-mile apart from each other?—No.

2159. Have you made the calculation for your own district?—No, I have nothing to do with that.

2160. Do you know the average distance apart of the fire-escapes in your district?—It depends upon the neighbourhood. In the thickly populated districts the fire escapes are from half to three-quarters of a mile apart.

2161. And how many fire-escapes have you in the district?—Twenty-seven.

2162. Sir *Henry Peek.*] With regard to those two men that you lost, were they transferred to another station?—They were.

2163. Then the fire brigade service did not lose them?—They did not.

2164. It was only that you lost them?—Yes.

2165. How are the men drilled; are the recruits sent to you one or two at a time to be drilled by you, or do they come to you already drilled?—They come to us already drilled, and they are drilled by us afterwards as well.

2166. Where does their preliminary drill take place?—We have a place at the Grand Junction Wharf where they are drilled.

2167. How long are the men there before they are drafted to the different stations?—The time varies; some men get away very quickly, and others are there perhaps for two or three months; it depends upon the men; I cannot speak upon that point.

2168. You joined at 20 years of age; how long were you drilling?—We had a different course of instruction at that time; we had nothing to do with fire-escapes, and we had no steam-engines at that time.

2169. The drill now is a very different thing indeed from what it was 18 years ago?—Very much so; the drill then was nothing to be compared to the drill now.

2170. Take an average young man, how long would he be drilling?—It would depend a great deal upon the man; some men might get used to the work in eight or ten months, and others would take longer than that. I have had men that have been over twelve months, and then I could not depend upon them for telegraphic purposes and for everything which we are connected with.

 2171. But

2171. But I want to know this: how long are the men at the Junction Wharf before they are drafted to the stations?—I think from one to three months, but I am not able to speak upon that point.

2172. If I understand you aright the main complaint of the men is, not that they do not get a night off, but that you can never depend upon getting a night off?—No, they can never depend upon getting a night off.

2173. You stated that during the month of March your men worked 14 hours a day, therefore they would have had 10 hours off, and I suppose that if they could have 10 hours off as a rule they would be perfectly satisfied, and even much less than that?—I think I explained that the men did not get 10 hours off; 14 hours is the actual duty that is recorded to them; but besides that I am continually calling them for other duty independently of those 14 hours; a man is never out of my sight; he always has to be at the station; in fact it is continual duty through the 24 hours unless a man is on leave or sick.

2174. Then, I suppose there are some of your men who have not been to church for months?—There is no doubt about that.

2175. Or for years?—I cannot speak about that. If it is possible to give a man leave on Sundays we do it.

2176. You would have to call a man out of church on Sunday if there was a fire, would you not?—It is during the night time that we cannot spare the men. We could spare them sometimes in the morning and afternoon, because we have more men on duty in the night than during the day on account of not having the escape duty to perform during the day.

2177. Mr. *Clifton.*] On an average how many nights in a month do you go out on duty?—Sometimes the men are out three nights, and perhaps the next night they will be in bed, and again they may be two nights in bed and one night out; we cannot fix upon that very well.

2178. With regard to yourself, what amount of leave do you get in the course of the year?—I have a week in the year if I make application. I get leave at other times if I require it.

2179. You can always count upon a week, can you not?—Yes.

2180. I think you stated that in the police force the men were promoted by merit?—I think so.

2181. How is promotion arranged in the fire brigade?—The promotion is mostly by seniority.

2182. There is very little promotion in the upper ranks, I suppose?—Very little.

2183. Is that owing to there not being a superannuation fund?—That is owing to there not being a superannuation fund.

2184. With regard to the fire which took place at Woolwich, of which you were talking, did you get much assistance there from the soldiers?—Very little.

2185. Do you think that soldiers might be used more than they are?—They might for their own purposes, but I think not as a rule.

2186. You do not think that soldiers could be drilled so as to materially assist you?—Soldiers would not suit for London work; they would do very well for firemen about barracks, or upon their own premises, but they would not do to work as a fire brigade.

2187. Why not?—I think the destruction would be too great; it requires a man who is thoroughly trained to the business to make a fireman.

2188. But would not a soldier be able to assist you in moving the hose?—No, I do not think the system would work at all.

2189. You do not think the police could help you either?—They might. I think the greatest help the police can give is to keep the crowd out of our way.

2190. And to keep out of your way?—Yes, and to keep out of our way. The police have a very great deal to do at fires to keep the crowd back, according to my experience.

2191. Sir *James Hogg.*] You stated that your men worked 14 hours a day upon the average during the month of March?—Yes.

2192. And that you have got 10 men?—Yes.

2193. You can give leave with 10 men working 14 hours a day, can you not?—The men are generally at work up till dinner time; sometimes until two o'clock, and sometimes until three o'clock in the afternoon. A man does not care much about going upon leave then for the remaining part of the afternoon.

2194. The men do not care for half a day; is that your opinion?—They have

to be home for escape duty, and the time is not sufficient for them to make any real use of.

2195. But you can give them now and then a whole day, can you not?—Yes, where we can spare them.

2196. You always give leave when you can?—Yes.

2197. You stated just now that you considered six men and one officer might be a good addition to you; I presume that that is for the whole district?—No, for my own station.

2198. I suppose if you had that you might be able to send assistance to other stations?—Precisely so.

2199. You would not apply that observation as to the increase of number to all stations?—I would not apply that to all stations.

2200. Only to the head stations?—Yes.

2201. You stated that if the engine went out with three or four men you would leave the station practically denuded, but is it not the case that when the engine went out you would telegraph to the surrounding stations which had not been called out?—Yes, and they would go to the fire to give assistance.

2202. Have you ever known an instance of a complaint of the non-arrival of engines?—I do not recollect such a case.

2203. Then, practically, if the engines always arrive in tolerably fair time, how could you say in regard to Peek & Frean's that you think that if the engine had arrived more quickly there would have been less destruction of property?—My answer was that if we had had more men there would have been less destruction of property; we were very short of men at that fire.

2204. Is it not a great desideratum to get the engines to work quickly?—Yes; but at this fire which I am speaking of we required a large number of engines.

2205-6. There were a great many engines there, were there not?—Yes.

2207. With regard to the manual engines, you pay men to work them, do you not, 1 *s.* the first and 6 *d.* per hour afterwards?—Yes. I am not speaking of pumping at all; I am speaking of getting the hose run out.

2208. Could you not utilise the crowd; would not they help you in pulling the hose out, or anything of that sort?—The police help us in doing that.

2209. You always find the bystanders ready to help you in every possible way, do you not?—Yes, if you pay for them.

2210. They are paid for it, are they not?—They are paid for pumping the engine; we do not pay them for anything else without we employ them.

2211. Many persons would do it for the fun of the thing, would they not?—We do not find that; we find that they are very quick upon us for payment if they assist us in any way.

2212. You stated that, in your opinion, the fire-escapes should be within half of a mile of each other?—In populous districts I think they should.

2213. Your district is in one part populous, and in the other not; is not that the case?—Yes.

2214. And in Blackheath and all round there you would not put fire-escapes nearer than one or two miles from each other?—No; I am only speaking of populous neighbourhoods.

2215. I believe two-thirds of the district you are in is not densely populated; is not that the case?—A great portion of it is only market gardens and agricultural district.

2216. So that, practically, very few extra fire-escapes would be at any rate quite sufficient?—I cannot say how many would be sufficient, but I only say I think it is necessary to have more.

2217. Just in the most populated parts; is not that what you mean?—We have not a fire-escape in Battersea, for instance, at all.

2218. You said something about the fire at Peek & Frean's; were you in charge at that fire?—No.

2219. Who was in charge there?—Captain Shaw.

2220. And a superintendent?—Yes, and a superintendent.

2221. Did you ever hear of any report being made to the authorities that less damage would have been done if there had been more engines and men?—No; I never heard of any report to that effect. I am simply speaking of it as an instance of one fire which I remember.

W. Port.

11 May 1876.

2222. This is just an opinion of your own, formed hastily?—Yes, but not formed hastily.

2223. There was no report ever made to that effect?—No.

2224. You stated just now, did you not, that a superannuation fund would be required, and that the men ought to be allowed to retire after 30 years' service?—Yes; I think that a man should claim to go away after 30 years' service; but if anything was to happen to him after he had served 25 years, and he was pronounced unfit for service, I think he should reach the maximum pension after that servitude.

2225. I think you said also that, in your opinion, the men would not leave then if they were fit for service and able-bodied?—I do not think they would.

2226. Then will you kindly tell me how a superannuation fund would increase the flow of promotion; because, in answer to an honourable Member, you said that the want of a superannuation fund prevented the flow of promotion. If the men get the superannuation fund, you do not think that would of itself increase the flow of promotion, do you?—I think we should find it would increase the flow of promotion, because we should lose men of whom we have many now, who are really not fit for the service; but, speaking of able-bodied men, I do not think they would go.

2227. Have you ever turned your attention to the different sorts of buildings where fires occur; in the centre part of Woolwich there are a great many old buildings, are there not?—A great many.

2228. On the outside of the town the buildings have been built under the Building Act, with party-walls in them, have they not?—I am not very well acquainted with Woolwich. There are lots of old houses there, but I am not acquainted with the construction of them.

2229. Do not you think it would tend to stop fires if houses were built with good party-walls?—Yes, I think so.

2230. Do not you think it would tend additionally to stop fires if the party-walls were carried up a good height, higher than at present?—I think they are carried up a good height.

2231. Not above the roof, I think?—I think, in most houses, the party-wall goes up above the gutter-plate.

2232. You think that it would be very advantageous if it were so in every case?—I think it would be very desirable that it should be so in every case.

2233. Sir *Henry Peek.*] I understood you to say that you thought there were men now in the service unfit for it, and who ought to retire?—I think there are men in the service now, at the present time, who ought to retire. I think if a man has served 30 years it is time he should go.

2234. And you think they are not practically able-bodied men now?—I do not say that they are not in all cases; for instance, a man might join at 30 years of age, and if he had served 30 years, I think it is time he should retire. I do not think men over that age should be retained in the service.

2235. I am not asking you your general opinion, but I am asking you as a matter of fact; I understood you to say that there were men now in the uniform of the corps who, in your opinion, were not fit for the service?—I could not say that they were not fit for the service, but I do not think a man ought to be retained in the service after he is 60 years of age. There are men who, although they have served 30 years, might go on until they were 60 years of age, but I do not think that a man should be retained in the service after that time.

2236. Are there men now in the service over 60 years of age?—I think there are.

2237. Mr. *Hayter.*] Have you, in your experience, known any man dismissed from the brigade merely on account of his age?—No.

2238. And those men would probably go on until they were past 60?—We had one of our men who died a short time ago, and I believe he was a good bit over 60 years of age.

2239. But, as a matter of experience, you have never known a man dismissed on account of age only?—No.

2240. The complaints of the men relate, do they not, to superannuation, rather than to the pay?—Yes.

2241. Are there any complaints with regard to promotion?—Yes; promotion is not fast enough in the brigade.

2242. There

2242. There is no average upon which a man could reckon upon promotion?—None at all.

2243. Are there not two turncocks sometimes in the same district living together; the turncock is not always one man, is he?—No; there are four turncocks close to my station.

2244. And they could arrange among themselves so as not all to be absent, could they not?—I believe they do do so, so far as they can.

2245. And each of them knows which plug to turn?—I am not prepared to answer that. I cannot say anything about their duties at all.

2246. But, generally, you have found one turncock at home when sent for?—Yes, nearly in all cases.

2247. Do you think it is a good plan to advertise the addresses of the turncocks, as they do in St. George's Vestry?—I should think that would be a very good thing, but the police all know where the turncocks live.

2248. But the police have several duties to do at once; a policeman may either be able to get one, or he might not be able to do so?—I think it would be a very good thing to have them advertised.

2249. Mr. *John Hardy.*] If you get a good superannuation scheme, would not that rather create a tendency to keep men in the corps; and though it would make the men contented, it would have a tendency to stop promotion rather than to improve it, would it not?—No, I think not according to what Captain Shaw has suggested. I think it would be a good thing for the service generally.

2250. What Captain Shaw suggested was, that practically promotion should go up to the rank of a first-class fireman, whether there is a vacancy or not; it is not really a promotion but an increase of rank, but according to your proposition an increase of rank would rather destroy than increase the promotion. A man would be pretty sure to stop until he got his superannuation?—It would do away with a great deal of discontent.

2251. You think the men would rather have slower promotion and superannuation?—I think so.

2252. Mr. *Hardcastle.*] You stated that in your opinion there ought not to be more than half a mile distance between the fire-escape stations; can you tell me how many persons have been rescued by the fire-escapes in the course of the past year in your division?—I cannot tell you off-hand.

2253. Have you no idea at all; have there been any?—I do not think there have for this year.

2254. Do you think there were last year?—Yes, but I am not prepared to answer that question. A superintendent or Captain Shaw could answer that question.

2255. Are not the fire-escapes under your control in your own district?—There are three under my control.

2256. Generally, it is a very rare thing for a fire-escape to be required, is it not?—Fire-escapes are very handy to us for other purposes besides saving life; when we cannot get inside a building they enable us to get outside of it with our hose to put the fire out.

2257. Have you ever known of a life being lost in consequence of the non-arrival of a fire-escape?—I cannot call one to mind at the present moment.

2258. When you were asked whether the service was popular, you said that it was so, and some surprise was expressed that so many men should leave a popular service; is it the fact that most of the men leaving do so in order to get some better employment?—Yes.

2259. In fact, their good character in the brigade opens out some better employment for them?—Yes, it does,

2260. That would naturally increase the popularity of the brigade?—I did not quite understand the question when it was put to me. I took it that it was meant to say the popularity of the force with the public, not with the men themselves. I understood it so in the first place, but not afterwards.

2261. But the fact that the brigade leads to something better would naturally make it a popular service for the men employed in it?—It would.

2262. *Chairman.*] In talking of the brigade as a popular service, I suppose you would lead us to infer that the life of the brigade is popular with seamen?—Yes.

W. Port.
11 May 1876.

2263 They willingly volunteer to come into the brigade, although, after finding the amount of hard work, and the little chance of getting a pension which exists, they leave you too quickly?—That is so.

2264. And now with regard to the question of enlistment. What I inferred you wanted to put before the Committee was, that at present men are enlisted in the force at 25 or 30 years of age, who would leave you if they had that pension after 30 years' service, to the advantage of the service, whilst at present the officers of the brigade do not like to get rid of them as they cannot take a pension sometimes, and consequently you are keeping on men who are not quite so efficient as they ought to be for your service?—Exactly so.

2265. The fire-escape duty is confined to night work, is it not?—Yes.

2266. Do your fire-escapes not attend fires which occur in the day-time?—Yes.

2267. Is the necessity for fire-escapes not so apparent at fires in the daytime, as it is at night?—No; the fire-escapes are not wanted so much by day as they are by night.

2268. Now, with regard to an answer you just gave to an honourable Member; you said a fire-escape was of great use to the brigade for purposes besides that of saving life, because it enabled you to get at the fire from the windows or other parts where you could bring your hose to bear. That would be equally advantageous with regard to a fire occurring in the day as at night, would it not?—Yes; we should send to the nearest escape station for it in the day-time.

2269. But might it not happen that, by having the fire-escape upon the spot in the day-time, as you do at night, you would be enabled to cope with the fire better than if you had to send to a considerable distance for the escape?—I do not think, as a general rule, that that would be so.

2270. I am asking for the information of the Committee, if the fire-escapes are of use, as you say they are at night, not only for the purpose of saving life, but for the purposes of the brigade, do you not think that they are as much required for those purposes in the day-time?—No, I do not think they are so much required for those purposes in the day-time.

2271. Is that owing to the fact that at night it is less easy for you to do your work?—We can find our way about better in the day-time.

2272. You stated that, in your opinion, the brigade ought to be sufficiently strong not to be dependent upon outside help when you go to a fire?—I think we should not have to be dependent upon outside help.

2273. But, as regards work, you stated that the crowd were not always so willing to give you any help for which they did not get paid?—Yes; I think the staff ought to be sufficient to do it without having to apply to any one else.

2274. And that you might go out with your own staff with the knowledge that you would not be required to be dependent upon outside help?—Quite so.

George Duck, called in; and Examined.

G. Duck.

2275. *Chairman.*] You are a First-class Engineeer, in charge of the Old Kent-road Fire-engine Station?—I am.

2276. You are a witness from the same division, the D Division, as the other two witnesses have come from?—Yes.

2277. What is the size of the station you are in charge of?—It is what we call one of our principal stations; it is a steam station.

2278. Like the last witness's station?—Yes.

2279. What staff have you in the station?—I have six men besides myself.

2280. How many men do you send out in general with a steamer?—Of a night I have never more than two working men.

2281. Supposing a call comes to you in the night from a fire and you send your steamer, how many men can you send out with it?—Three men besides myself, but there are only two working men out of those, as my steam man is no good for running out the hose; he cannot leave the steamer for two minutes, and I have to run up to the fire to see where to direct the hose.

2282. So

2282. So that when your steamer goes out you have only two men who can work the hose properly?—That is so.

2283. Does that leave you the means of keeping up telegraphic communication?—I leave one man at home so as to keep in communication with the superintendent's station.

2284. So that when you are out with the steamer at a fire your station is closed for all further purposes?—For all further purposes of fire.

2285. So that the only means of attending another fire would be to telegraph on to another station for further assistance?—He would telegraph through for assistance, and take the other engine on, and then shut the station up altogether.

2286. Could he take the engine on?—He could take the engine on, but he could not do much himself.

2287. Have you read the evidence of Captain Shaw, and also of Mr. Hamlyn?—I have read the evidence.

2288. And you heard the evidence of the last witness?—I did.

2289. Upon the superannuation question, do you agree with them in what they have stated to the Committee?—I do.

2290. You think that the efficiency of the brigade would be promoted by a system which held out to men the prospect of a certain pension after a certain term of service?—I do.

2291. And you believe that men who at present leave you too rapidly for the benefit of the service, would be retained by the pension system being adopted?—Yes.

2292. Do you agree with the last witness, that the method of dealing with this question by superannuation, or by pension, is better than by a direct increase of wages?—I do not think that a direct increase of wages would cause men to stop with us at all.

2293. But you think that the same condition of things as exists now would remain if there were no desire on the part of the men to wait until they attained a deferred payment like a superannuation?—Quite so.

2294. With regard to the hours of service, do you agree also with the previous witnesses, that the brigade is too short-handed to do its work properly?—I do.

2295. And that the length of the hours of service is one of the reasons for the men being, to a certain extent, discontented?—It is.

2296. Is the same rule, with regard to constant duty, applicable to the men at your station?—Yes, it is.

2297. That you cannot, any more than the last witness, allow men to go practically outside your limits?—That is so.

2298. Are the men living more out of the station?—I have three married men living out of the station.

2299. Out of how many?—Out of six.

2300. What difference does that make to the rapidity of your engine arriving at a fire?—Fortunately for me the men are living close to the station, and it does not make more than 45 seconds difference to me in their turning out.

2301. But it would be an advantage to you to have all your men housed within the station, would it not?—Yes.

2302. Do you mean to tell the Committee that the whole time occupied by sending for the men, and their coming to the station, is covered by that 45 seconds?—It would take about 45 seconds to ring the bells and call the men.

2303. Do you mean that the 45 seconds would include all the time of sending that man, and his return to the station?—No; that would only include his going away to call them.

2304. How soon would your man go out and return so as to be available for work?—In about two minutes.

2305. I suppose that would leave you only two men to get your engine ready at the station?—It sometimes only leaves one, one being up-stairs, and he has to wait until the others come.

2306. Has that one man to harness the horses and assist in getting the engine out?—Yes, and the other men when they come in assist in getting the engine out.

G. Duck.

11 May 1876.

2307. Is the coachman one of the men who has to be called; is he one of the six at the station?—He is in the station, but not one of the six.

2308. So that he is there to help you in getting the engine under way?—Yes.

2309. And if you had a man on leave you would not have so many as that?—No.

2310. What time do you allow for getting your engine under weigh;—I am allowed three minutes and thirty seconds for getting the engines out.

2311. Can you do it in the time?—Sometimes I have been a little over, but on the average I do it in 3 minutes and 30 seconds; but I have continually to practise the men, or else I should not be able to do it. I make a practice of turning them out, and timing them to see that they do it.

2312. Will you tell me how many fire-escapes are attached to your station?—Two.

2313. Are the men who attend them included in your six men?—I have to work the two escapes with the six men.

2314. After recollecting what has been stated by the other witnesses, is there anything in addition which you wish to put before the Committee upon this question with regard to what the men wish to represent?—No, I have nothing to put before the Committee. I shall be very pleased to answer any questions that they may wish to put to me.

2315. Mr. *Ritchie.*] Have the class of engineers to which you belong any special grievance?—They think they ought to be put upon an equal footing with a first-class inspector of police.

2316. I understand you do not perform the same duties as the engineer who was in the chair before you?—No; I am in charge of an ordinary working station.

2317. Whereas the engineer who was in the chair before you was assistant to the superintendent, and considered that he should be put on a par with a chief inspector of police; you, only having charge of an ordinary station, only think that you ought to be on a par with a first-class inspector of police?—That is so.

2318. What is your pay?—£. 2. 8 *s.* 6 *d.*

2319. And you have lodging allowances?—Lodging, coals, and gas.

2320. They amount to 15 *s.* a week, do they not?—About 15 *s.* a week.

2321. That is equal to 3 *l.* 3 *s.* 6 *d.* a week?—Yes.

2322. What is the pay of a first-class inspecter of police?—I do not know.

2323. I find that it is 3 *l.* 2 *s.* 6 *d.* a week, so you have practically a shilling more than he has?—But I have a little more duty to do than an inspector of police, and an inspector of police has so many hours away, which really makes up for his not getting any coals or gas allowed him.

2324. But you started by saying that you wished to be on a par with him?—I think if they allow me that 15 *s.* for coals and gas, and allow me to live where I like, and give me as many hours as the inspector of police gets, I should be better off.

2325. But the previous witness said that if the number of men were increased, as he suggested, he would be able to get a certain number of hours off duty?—I do not think if the number were increased ever so much the officer in charge of the station would ever be able to get away as much as an inspector of police, who, after eight hours' duty, can get away; ours is a different duty altogether.

2326. But still your pay, allowing 15 *s.* for lodging money, is quite upon the par with the pay of a first-class inspector of police?—Yes, it is, if you take that into consideration.

2327. And if the number of men were increased you would have more leave than you have now?—I do not think it would make much difference to the officers to increase the number of men.

2328. Will you let the Committee know what your class think ought to be done for them?—They think the pay ought to be very near the same with the lodgings, as we are compelled to live there. We are bound to be there from one end of the year to the other, therefore I think that the lodgings ought to be allowed for that extra time we have to work. If they compel us to live at the station they ought to give us that rent-free.

2329. But

2329. But if you lived away from the station you would have to pay rent?—But we should have the time to ourselves.

2330. You would not necessarily have the time to yourselves if you lived away from the station?—Yes, we should, just the same as an inspector of the police. When he goes off his eight hours' duty he can go where he likes, but if I go up-stairs and the telegraph bell rings I am bound to go downstairs and answer it, which is a common occurrence. If a fire in a chimney occurs I am obliged to go and send men to look after it.

2331. Do you mean to say that you ought to have 3 *l.* 2 *s.* 6 *d.*, which is a first-class inspector's pay in the police, and 15 *s.* in addition, which would bring the pay up to 3 *l.* 17 *s.* 6 *d.* a week?—I am not speaking of the whole of that 15 *s.*, but only of the house-rent. It is not only house-rent that is included in that 15 *s.*

2332. What do you estimate the house-rent at?—Seven shillings or 8 *s.* a week.

2333. If we put it at 7 *s.* 6 *d.*, and add that to 3 *l.* 2 *s.* 6 *d.*, the first-class police pay, that would make 3 *l.* 10 *s.*?—I say I do not think we ought to have the full pay of the police and the 15 *s.* besides. You should deduct part of the allowance from that.

2334. You would take 7 *s.* 6 *d.* from that, and that would leave you 2 *l.* 15 *s.*?—Yes, that is so.

2335. You think that that is what your class consider they ought to get?—That is what a first-class engineer, who has charge of a station, ought to get.

2336. £. 2 15 *s.* a week, and house rent?—Yes, 2 *l.* 15 *s.* a week, and house rent.

2337. Mr. *Onslow.*] You say you think the men would not be inclined to stay in the force if there were an increase of pay merely?—No; if there was not anything to look forward to hereafter I think it would be the same as it is now. A man would say there is nothing for me to look forward to, and when I am too old for work I must go into the workhouse.

2338. The men leave your force, and I presume that they get more pay. Do they join forces or services where there is a superannuation allowance?—All our men do that if they can get into it.

2339. What class of service do the men go into?—Many of our men have left us and gone into the police for that reason.

2340. The men cannot get into the police force at 25 years or 30?—Some of our young men have left us and gone into the police. I know several who have done so.

2341. Is there any other service, except the police, in which a superannuation allowance is granted?—I believe there is, but I cannot mention any that I know of to my own knowledge.

2342. Sir *Henry Peek.*] Are you able to fine the men who are under you for any breach of discipline, or inattention to duty?—No, I am not. Every man who commits any offence is reported by me to the superintendent, and he then makes a report to Captain Shaw.

2343. A former witness stated that clothing for your body was found; is it found for you?—Yes, it is.

2344. Suppose you went to a fire, and your clothes were burnt off your back, they would give you some fresh clothes, I presume?—If the clothes were so far damaged that I should not be able to wear them again, I should write a requisition to Captain Shaw, showing that my clothes were not fit to be put upon my back again.

2345. You have a regular allowance of clothing, have you not; so many suits in so much time?—Yes; a regular allowance per year; the men have to take great care of them, so as to make them last.

2346. You said that your men felt that when they could not work, there was only the workhouse before them. Do you mean to say that they are not able to save money out of their pay?—No, they are not. I do not think there is one man in the whole brigade who, if you were to call upon him now to produce 10 *l.*, would be able to do so.

2347. Sir *Andrew Lusk.*] Substantially, you say you think your wages are too small for your services?—Yes, for the number of hours work we do.

G. Duck.

11 May 1876.

2348. You think you ought to be put upon the same class of pay as a first-class inspector of police?—As a first class inspector.

2349. Do you think that your duties are of as much importance, and require as much ability, as a police officer's duties?—I think a great deal more. A policeman has rules to go by, whereas we have nothing to go by.

2350. You are tied down so much?—Certainly; a policeman is not tied down quite as much as we are. I have a great deal more duty to do than an inspector of police. I have different boards to attend to. Our officers are divided into different boards, such as stores, and turning out boards; turning out at all hours of the night, drilling the stations to see that the men are quite up to the work, and so on, which would take men from their stations four or five days together. The police officers have not got that to do.

2351. You think the men would like a little more time to themselves; that does not apply to you; I think you say you do not care about any more time?—I should like a little time also; I get very little now.

2352. Suppose the men had a little more time, and got away, what service would they be to the public when they were away?—They would not be of any service to the public at all when they were away on leave.

2353. What do you mean by a little more time; do you mean to be able to go away for half a day?—Yes, to be able to go away for half a day; a man now has not one day to call his own during the year; he can only go away for a few hours by writing a special note for leave.

2354. Suppose you give the men half the time to themselves, and you have double the men you have now, the public would be no better off than they are now?—The men do not ask for half time off.

2355. But suppose they did?—Then it would require more than double the number of men we have now.

2356 But the giving of more time would not increase their efficiency if they were not on the spot?—No, their having more time would have for its object the doing away of the discontent which exists in the brigade now.

2357. It would not increase their efficiency to the public?—It would increase their efficiency to the public to some extent, because it would diminish their hard work. Our men go out sometimes when they are not fit, in my opinion, to go out on duty at all.

2358. How often do you go out for duty?—I am called sometimes two and three times a day, and sometimes not at all. I have been called out this morning.

2359. You have often to go out to fires in chimnies, where one man can do well enough?—I have had men out three or four times in a day for chimneys on fire.

2360. But serious fires?—I think it would not average more than four or five times a week.

2361. How is the service so unpopular amongst the men?—It is on account of the men not having time to get away for an hour or two; a man cannot go away to see his friends; and many of our younger men are single, and, of course, there are many little things they want to get away for; perhaps some of them are courting; they have no chance of getting away, and we do not allow females to come to our stations, so that it is keeping men very much tied at the present time.

2362. I think you say that the men will not stop long with you?—Yes.

2363. And that is the reason why I was asking why the service was so unpopular, as appears to be shown by the fact that a number of the men do not stop; do you think the fire brigade service is more unpopular than the police service?—I think it is; I think men stop in the police force longer than they do in the fire brigade.

2364. Have you any particular class of men that you like, as far as you are concerned, to draw the men from, who come to you?—I think sailors are the best men we can get.

2365. Why do you think so?—Sailors are more use to climbing about than other men, and they can put up with more discipline than a man who has been on shore all his life.

2366. What kind of ships do you want your sailors out of?—It does not matter whether they come out of the merchant ships or out of the Navy.

2367. But

2367. But you know that in steamers there is very little climbing to be done?—That is true to a certain extent.

2368. Mr. *Hardcastle.*] Do you broadly say that the service is unpopular amongst the men?—I think it is; I think that is shown by the number of men leaving the force.

2369. Do you think there are reasons for leaving owing to the better openings that are to be found for them?—I think that if the service was popular the men would stop instead of going elsewhere.

2370. I wish to ask you one question about the fire-escapes; have you in your experience within the last 12 months known of the case of a life saved by a fire-escape in your district?—Not in the case of either of the two escapes that I have charge of.

2371. Have you in the last two or three years known a case of life saved by a fire-escape?—It is some time ago; about three or four years ago there were one or two lives saved in the Kent-road at a watchmaker's shop.

2372. Is the fire-escape often required for saving life?—I think it is often required.

2373. But you say you cannot recollect any cases of lives being saved within the last two years?—I am speaking only of my own station, and I have only two escapes out of one hundred and odd.

2374. *Chairman.*] Are you in a position to tell the Committee how many lives, if any, have been lost in your district during the last two or three years?—I do not know of any in my immediate neighbourhood.

2375. What you mean to say is, that if the fire-escapes have not saved life, it is probably that lives have not been in danger?—That is so.

2376. And you represent to the Committee that fire-escapes would be valuable because some day there might be a fire in which life would be endangered, and in those cases the fire-escapes would be exceedingly valuable in saving it?—Exactly.

2377. With regard to the unpopularity of the service, I imagine you mean that the service is popular in the way of attracting men to it; that sailors join it readily, but that the service is unpopular from the fact that the men, after having joined what they thought a popular service, find that the hours of service and the remuneration offered them are not sufficient to induce them to decline better appointments which may come before them?—That is so.

2378. I understand that the recommendation which has been made by Captain Shaw with regard to the time allowance to be made to the men has been limited to asking that the men might count on one night a week off duty?—Yes.

2379. You are doubtless of opinion that the fact of a man having a little rest of that sort tends rather to promote his efficiency than otherwise?—Yes, I think so.

2380. A man is not so worn out, so that when he is on duty he is more useful and better able to perform it?—Quite so.

2381. And therefore is a better servant to the public than if you work him to death, and compel him to go on with his duty when he is worn out?—Exactly.

2382. Mr. *Ritchie.*] With regard to the unpopularity of the service, would the addition of 200 men, which has been suggested, practically more than double the number of men available at night for fires?—I think so.

2383. Do you know how many men are available at night?—I have no idea, but Captain Shaw could give that information.

George Bull, called in; and Examined.

2384. *Chairman.*] You are a Second-class Engineer, I believe?—Yes.

2385. In what district?—In the B district.

2386. What station are you attached to?—Whitecross-street, City.

2387. How many men are there at your station?—Nine, including myself.

2388. Is there another officer above you in charge of the station?—No, there is not.

2389. You are in charge of the station?—I am.

 2390. What

G. Bull.

11 May 1876.

2390. What engines have you?—We have one steam engine, and a manual engine.

2391. What number of men do you generally send away to a fire with your engine?—If I was fully manned I should send five, and leave one man at home.

2392. Under those circumstances your station would be equally short-handed with that of the last witness?—Yes.

2393. If you have a call for a fire you are really only efficient for one engine?—Yes.

2394. You heard the evidence of Captain Shaw, did you not?—Yes, I did, and what I have not heard I have read.

2395. And the evidence of Mr. Hamlyn?—Yes.

2396. Do you agree with them on the question of superannuation?—Entirely.

2397. You believe that a system of superannuation, if given, would assist the force very much in retaining their men?—Yes, I think it would be a great assistance in that respect.

2398. Do you think the terms which have been submitted by the men, being 25 and 30 years, would be the periods that the brigade would generally recommend?—Yes; the years that I would recommend myself are 25 and 30, and I believe that to be the opinion of all the officers.

2399. The scheme was drawn up with the concurrence generally of the brigade?—It was; both officers and men.

2400. With regard to the question of time, do your men consider themselves equally over-worked with the men at other stations?—I think they are upon a par with the men at other stations. Their work amounts to about 14 hours booked to them; that includes duty which they may do at night, and then at other times they have to be at hand in case of fire or messages.

2401. After that amount of duty has been deducted from the 24 hours, during the other 10 hours also they have really to be ready for duty?—Yes, they have.

2402. The men cannot count upon any time to themselves out of the day?—No.

2403. Are you able to allow of the men going away on Sunday at all?—Only one or two in the daytime, but not more.

2404. You can hardly count upon giving regular leave of that sort to anybody?—Not at all.

2405. That is what the men are anxious to get established throughout the brigade, namely, a certain amount of time off duty which they can count their own?—Yes.

2406. And with those two recommendations you believe the force would be satisfied, and also that they would tend very much to the force being maintained in an efficient condition?—I think that would tend very greatly to keep the men in the brigade.

2407. Have you had any experience in your station of being short-handed with regard to fires?—Yes, I have on several occasions, on first arriving at fires. We have not always the five men to take with us.

2408. And then you are dependent upon the police or other outside assistance?—Yes.

2409. Do you find that outside assistance given willingly?—Generally; but the assistance is not always such as we should like to have.

2410. It is not skilled assistance?—No.

2411. And they are sometimes more trouble than benefit?—Sometimes we have more trouble with them than without them. We have no time to instruct them when we are at a fire.

2412. Every second at a fire is of value, and you have not time to teach the men, who are, perhaps, as much in the way as otherwise?—That is true.

2413. Have you anything to state to the Committee on behalf of the class which you represent?—On behalf of the class I represent, I wish to make a statement with reference to the wages.

2414. What are your existing wages?—My wages, at present, are 2 *l.* 2 *s.*

2415. As a second-class engineer?—Yes.

2416. How does that compare with the wage paid in the police force?—I am informed that it is pretty nearly on a par with the pay of a second-class inspector, reckoning allowances, but that is not our point. Our point of grievance is, that being in charge of important stations, as many of us are (about half our number

are

are in charge of important stations), equal to first-class engineers, we, in our opinion, are as fully entitled to the same remuneration.

2417. I understand from that answer that a second-class engineer, when he has charge of a large station, considers he ought to be classed, as far as wages are concerned, with the first-class engineers, who are also in charge of stations? —Yes; his duties are, in every respect, similar.

2418. You think that the class of first-class engineers should be practically enlarged, so as to enable the head of every station to be in that rank?—That is my opinion, and it is the opinion of our rank also.

2419. Is that the only point which you wish to mention with regard to the wages?—It is.

2420. Are there any allowances made beyond the actual rate of wages, such as firing and coals?—Yes, we have some allowance. There is the same allowance to the second-class engineers as to the first-class engineers in that respect.

2421. That allowance is equal to 15 *s.*, is it not?—Yes; that is about the value of what is allowed us. I believe the Metropolitan Board of Works have valued the allowance at about 15 *s.*

2422. So that you are in receipt of that amount of wages which you have stated and 15 *s.* besides?—I am.

2423. Is there any other point which you wish to mention to the Committee? —No, that is the most important point.

2424. Mr. *Ritchie.*] Is the promotion of a second-class engineer to a first-class engineer by seniority, or by selection?—The promotion is generally by seniority if the man is fitted for his post. The number is limited to 30 first-class engineers, whereas there are 54 stations.

2425. How many second-class engineers are there in charge of stations?—I do not know the exact number; there would be about 23 or 24.

2426. Are the stations always in charge of either first or second class engineers?—Yes, they are.

2427. Are those second-class engineers who are in charge of stations the seniors of that class?—Yes, they are the seniors.

2428. How long have you been a second-class engineer?—I have been a second-class engineer over eight years.

2429. And how long have you been in charge of a station?—About seven years and six months.

2430. So that since you have been a second-class engineer you have been almost continuously in charge of a station?—I have.

2431. Do you think it right that a second-class engineer who has only been so for perhaps about 12 months, and who has been put in charge of a station, should receive the same pay as a first-class engineer?—A second-class engineer is not likely to be put in charge so early as that.

2432. But you were put in charge as early as that?—I was at that time certainly. Where a man has the same responsibilities and duties, I think he is justly entitled to the same pay.

2433. You would not allow anything for the time of service of a man who was a first-class engineer over a man who was a second-class engineer?—I do not think you ought to make any difference.

2434. You consider that if you perform the same duties you should have the same pay?—Yes, I do.

2435. Mr. *Onslow.*] How long have you been in the force?—I have been in the force 15 years.

2436. How old were you when you enlisted?—Twenty-five years.

2437. Then I understand you to say that you were 32 years old before you got 2 *l.* 2 *s.* a week?—Yes, about that; at least, I was more than that, because there has been a rise of pay since I was first appointed. In 1872, there was a general rise of pay to all ranks.

2438. What is the average time it takes a man in the brigade to attain your present rank?—I do not know. Probably about 10 or 12 years, more or less. I cannot say exactly.

2439. I may take it that the time in which you attained your present position was about the average time?—Yes, probably it was.

2440. And that was, how many years?—That was seven years. It would be eight or 10 now. We were extending our force at that time a great deal, and of

G. Bull.

11 May 1876.

of course fresh stations were opened and increased, which gave us promotion rather more quickly than we should have otherwise had it.

2441. You cannot tell the Committee exactly how many years it would require a man to remain in the brigade before he got 2 *l.* 2 *s.* a week?—I cannot tell the Committee exactly the time. It would depend upon how fast they opened the stations, or how quickly the officers left.

2442. Are there many men that you know of now in your brigade who enlisted at the age of 17?—I cannot name any; I do not know of any.

2443. Can you name any who enlisted in the brigade at 19?—I do not know the ages at which the men enlisted. You will be able to obtain their ages from the chief officers.

2444. Are you aware of any of your men who belong to benevolent or friendly societies?—I do not know that there are. There might be one or two, but I am not sure of it.

2445. To take your case; you are permanently in charge; are you often able o go to church?—No, very seldom.

2446. If you do go to church, in whose charge do you leave the station?—I have to leave the station with the next senior man.

2447. It is very seldom that you can get to any place of amusement, I presume?—I very rarely go. It is possible I may be able to go once or twice in a year, but I do not very often go. It would be only on special leave if I went then.

2448. Sir *Henry Peek.*] We have been told that the men, for the sake of superannuation, would be willing to have 2½ per cent. deducted from their wages; do you agree with that?—I believe all the officers would willingly consent to that, but I would rather the men should answer that question for themselves.

2449. If I understand you rightly, you are in charge of a station with nine men?—Yes, I am.

2450. Including yourself?—Yes.

2451. A previous witness stated that he was in charge of a station with 10 men, including himself?—One of the previous witnesses was.

2452. Then the wages do not necessarily follow the command; that is to say, an inferior officer may be in charge of more men than another officer receiving more wages himself?—Yes; it depends upon the position of the station a good deal.

2453. Do the men stick to their station; that is to say, if you had been an ordinary rank and file man in a station, and your conduct and intelligence warranted it, are you put forward in that station, or how are you put forward; are you moved to another station?—For the general arrangement of the brigade we frequently have to move.

John Kelly, called in; and Examined.

J. Kelly.

2454. *Chairman.*] You are a First-class Fireman, I think?—I am.

2455. At what station?—I belong now to the D Float; the Floating Station at Cherry Garden Pier, Rotherhithe.

2456. What number of men are attached to the float?—Six men besides the officer.

2457. Are you second in command there?—I am first-class fireman; I am the senior man there.

2458. Are you always on duty at the float?—I am always on duty on board the float, or else in attendance at our house on shore.

2459. But you are permanently attached to the float just as much as if it were a station, are you not?—Just the same.

2460. What time does it take you to get your float under weigh on receiving a call to a fire?—From 15 to 20 minutes.

2461. Then your fires are not kept up, are they?—The float is always kept with a certain amount of steam on; we bank the fires.

2462. Have you ever been prevented from bringing your engine to bear upon a fire owing to the water being so low that you could not get to the part?—Not since I have belonged to the float.

2463. What depth of water do you draw?—I do not know exactly.

2464. Have

2464. Have you heard or read the evidence which has been given by previous witnesses?—I have.

2465. Do you, as representing your class of the brigade, believe that that evidence puts before the Committee the views and wishes of the men?—Yes, nearly.

2466. With regard to superannuation, do you think that Captain Shaw, and other gentlemen who have given evidence, represent the views of the men generally?—Yes; it would give satisfaction generally.

2467. You believe that a scheme under which, after 30 years, a pension could be claimed for service, and after 25 years could be claimed also upon medical certificate, would satisfy the men?—Yes.

2468. Do you believe that that would induce men to remain longer in the force?—Yes.

2469. How long have you been yourself in the brigade?—I have been in the brigade 10 years.

2470. During that time have you known a great number of men among your comrades leave the brigade?—Yes.

2471. And leave the brigade, stating they left it because they did not see a prospect of getting a pension in the future?—Yes; for that and other reasons.

2472. What are your hours of duty?—Upon the float I belong to we have been 60 hours on duty very often.

2473. That is to say, without taking your belt off?—Yes; without taking my belt off.

2474. Do you think that the question of the hours was a part of the reason of those men leaving?—A very great part.

2475. They complained that having to be so constantly on duty the life was not one that they liked to continue?—Quite so.

2476. And in your case, when you have been 60 hours on duty, what has been the reason of that; was it owing to sickness among the men attached to the float?—No; we have had no sickness on the float.

2477. Was it because you were short-handed on the float?—Yes.

2478. Is that a permanent state of things?—Yes, it is.

2479. You are always short-handed?—Yes.

2480. How often does it happen that you are liable to be that length of time on duty?—It is the sixth turn of duty.

2481. Do you mean to say that every sixth turn of duty you have 60 hours of duty?—Yes.

2482. That is more duty than they have at the station work?—Yes, as a rule.

2483. I suppose when you are on duty you lie down occasionally?—Yes.

2484. You are able to rest, are you not?—Yes.

2485. But you are liable at the same time to be called at any moment?—Yes; we always have to keep awake on board the float to answer a call or a whistle.

2486. So that it is a sort of watch?—Yes.

2487. And that watch lasts 60 hours; is that what you mean to convey?—No, we are not on board the float 60 hours; it is our other duties which make up the 60 hours.

2488. Besides being on the float, that 60 hours then represents station duty on shore?—That is so.

2489. How do you arrange those two duties?—Out of six men belonging to the float, one is sent out to a station in the district every night, and we are at work all day. Whose ever turn it is out to-night, he would have to work on board all day to-morrow, on duty at the float to-morrow night, and at work all the next day, making by six o'clock the next evening 60 hours.

2490. And what amount of time elapses before that man comes on to any duty again?—He will be on board the float again at work at six o'clock the next morning.

2491. He would have 12 hours off?—He would have 12 hours off if there is no message.

2492. Even during that 12 hours he is liable to be called again at any time in case of emergency?—He is.

2493. I suppose from what you have stated you are not able to get any time yourself

J. Kelly.

11 May 1876.

yourself for the purpose of going to church on Sundays?—Perhaps one man might be spared every Sunday to go to church.

2494. Are you able to arrange in that way, that one man has leave every Sunday morning or afternoon for that purpose?—Yes, we are able to arrange that.

2495. With that exception the men have no time to themselves at all, except the few days leave which they may get in the year?—That is all.

2496. What is the rate of your pay?—I get 5 *s.* a day; that is, 1 *l.* 15 *s.* a week.

2497. Are there any allowances?—I get no allowances.

2498. Are there no allowances among the men?—No.

2499. Have you any complaint to make upon the question of pay?—No, the pay is tolerably satisfactory to the men. If we were paid according to the number of hours we are on duty, we should have a very large salary.

2500. What I imagine is, that your complaint is not so much that your rate of pay is insufficient, but that the number of hours which you are called upon to serve is oppressive, and that there is no future prospect held out to you in the way of superannuation?—That is so.

2501. Is there anything else which you would wish to represent to the Committee as a first-class fireman?—Yes, I would wish to refer to the utter state of stagnation as regards promotion.

2502. The present course of promotion is stagnant, is that so?—Yes; I would put my own case as an instance.

2503. How long have you been a first-class fireman?—I have been a first-class fireman three months.

2504. How long were you as a second-class fireman before that?—I came into the brigade in the third class. I was never in the fourth class, and it has taken me 10 years to go up the third and second classes, without anything against me the whole time; consequently, in the case of a man joining the fourth class it would take him 20 years or more to get to the top of the first class under existing circumstances.

2505. It would take a man 20 years to get into that position from which he would be selected as an officer?—Yes.

2506. Do you think that superannuation would assist the flow of promotion?—Yes; we are in hopes of its doing so.

2507. You think that by a scheme of superannuation men, after they had served a certain time, would leave the force in a certain number, and that the flow of promotion would be more rapid?—Yes.

2508. Of course if you get a large increase to the different classes, that would promote the flow of promotion also?—Yes, it would.

2509. Mr. *Ritchie.*] Are you aware that Captain Shaw spoke of increasing the brigade by 200 men, and of altering the method of promotion?—Yes, I am.

2510. In addition to that increase of 200 men, Captain Shaw stated that he proposed that the various classes should not be limited to a certain number, but that after a man had been a certain time in one class he should necessarily pass into another?—I am aware that Captain Shaw made that proposition.

2511. The fourth-class men by such an arrangement would be able, after having been six years in the service, to attain to the grade of first class?—Yes, I am aware of that.

2512. Do you think that such a system as that would give satisfaction?—I think that would give every satisfaction.

2513. If you lose your night in bed is it made up to you at all?—There are no means of doing so.

2514. You mean that if a man comes off after having been 60 hours on duty and it is his night in bed, and he does not go to bed, he has to go on his round of duty just as if he had had his night in bed?—Yes, that is so.

2515. You stated, did you not, that if you were paid by the number of hours' work you did you would have a large salary?—Yes.

2516. How many hours do you think you have been upon duty in a week?—About 120.

2517. That is two ordinary weeks' work, is it not?—Yes.

2518. So that, upon the average, you consider that you work two ordinary weeks in one, do you not?—Yes.

2519. Mr.

2519. Mr. *Onslow.*] Are you aware whether any of your men belong to friendly societies?—I believe a great number do.

2520. Are you aware whether there are many men in the brigade at the present time who enlisted at the age of 17?—No, I am not.

2521. You do not know one instance?—No.

2522. You are not in a position to say that that may not be the case?—No, I could not say that.

2523. Are you aware of any who enlisted at the age of 19 who are in the brigade at the present time?—I believe there are some who enlisted at that age, but I do not know them.

2524. When men leave the brigade what reasons do they usually give for doing so?—The principal reasons are that they are so extremely confined that there is no chance of promotion, and no pension to look forward to.

2525. The last witness said that many of those men who had left the fire brigade had joined the police force; is that your experience?—I do not know that.

2526. You do not know where the men go to, as a rule, when they leave the brigade?—I do not know.

2527. The men do not say what they are going to do?—No.

2528. Sir *Henry Peek.*] Are your duties as a man stationed on a floating engine different from those of a man engaged at a land station?—Yes, to a certain extent.

2529. If your time for promotion came should you be competent, from your knowledge, to take charge of a land station?—That is what we go to the float for, to get experience of steam and learn to take charge of a land steamer.

2530. Do all the men serve upon the float a certain time before they are put forward to the charge of a station on land?—Before they are put in charge of a land steamer they are put through their probation at a float.

2531. Have the men any grievance about their clothing?—I have never heard of any.

2532. If the clothing is destroyed at a fire, does Captain Shaw deal with the men in a liberal manner?—Yes, he does.

2533. Mr. *Clifton.*] You stated that it took you 20 minutes to get the float under weigh?—Yes, I did.

2534. Is that from being short-handed?—No, we are under banked fires, and that is the time allowed, I believe, for getting up enough steam to run the engine.

2535. With regard to the superannuation fund, do the men agree to pay $2\frac{1}{2}$ per cent. of their pay?—Yes.

2536. Mr. *J. Hardy.*] You state that you think a superannuation fund would increase the flow of promotion; have you any notion of how many officers there are in the brigade who have more than 30 years' service?—No, I have not.

2537. Because it would be only those men who have more than 30 years' service who would be entitled to retire on a superannuation?—Quite so.

2538. That would be a very small proportion, would it not?—Yes.

2539. Sir *Andrew Lusk.*] You stated that you had sometimes 60 hours' duty; what do you do all that time?—We are hard at work all the morning.

2540. Hard at work; doing what?—We have been under exceptional circumstances recently, because our float has been lying up in dock, and therefore when she came out we have been harder at work than we should have been under ordinary circumstances.

2541. How many times have you been called out during the last month?—Once.

2542. How many times have you been called out during the last six months?—I have not been there six months.

2543. Do you get no sleep during the 60 hours?—Yes, I am on duty during 60 hours.

2544. I thought you never shut your eyes during the 60 hours; how many hours are you asleep?—I may get three hours sleep in the night; there are two of us, and we take watch and watch.

2545. Like sailors?—Yes, but we cannot get to our hammocks like sailors.

J. Kelly.
11 May 1876.

2546. You are at work cleaning the ship, are you not?—Yes, and the hose; we have a lot of hose on board.

2547. You have nothing to do with navigating the vessel; the fire is kept banked?—Yes, it is.

2548. Then you stated that men left the brigade for other reasons besides the length of duty; what other reasons do the men leave for?—The men leave on account of the stagnation of promotion, and having no pension to look forward to for their old age.

2549. Do you all expect to get promoted?—We hope to, if we deserve it.

2550. You stated that you did not know the draught of water of your vessel?—I am not sure of it enough to state it. I believe it is about four feet forward, and five feet aft.

2551. Mr. *Hardcastle.*] Does this steam float propel herself?—Yes, she does.

2552. And does not require to be towed?—No.

2553. Is it the same boiler for propelling her as for working the pumps?—Yes, it is.

2554. Mr. *Locke.*] You say your station is at Rotherhithe?—Yes, it is.

2555. You live on board the D Float there, do you not?—I work there.

2556. How many men are there on board that vessel?—There are seven altogether; six men and an officer.

2557. Do they all live on board?—No, they live on shore.

2558. At what distance from the float?—I do not know the distance exactly; the distance to the shore would vary, according to whether the tide were up or down.

2559. Are there any other vessels of the same description at Rotherhithe, besides the one in which you are?—Not at Rotherhithe.

2560. How many floats are there altogether on the river by the side of the parish of Southwark?—There are two on the Southwark side.

2561. Where is the first one placed?—The first one on the Southwark side is at Southwark Bridge.

2562. Whereabouts is your float?—A few yards below Cherry Garden Pier, Rotherhithe.

2563. How far down is that from the Southwark float?—It is a little over a mile and a half.

2564. Are those the only two that there are?—No, there are two on the other side of the river; one in Limehouse Reach, and the other at Lambeth Bridge, Westminster.

2565. Are those floats in such a position that they are not opposite to each other?—The first upon the river would be that one at Westminster, or Lambeth Bridge.

2566. How many of them are there all the way down the river which would be in Southwark; you say that the first one is at Southwark Bridge?—Yes, that is the first one for Southwark.

2567. Where is the one immediately above that?—The one immediately above that is the Westminster float, which is upon the Middlesex side.

2568. What distance is the Rotherhithe float from the Southwark Bridge one?—About a mile and a half.

2569. What is the next one below that, going down the river?—The next one is in Limehouse Reach.

2570. That is on the opposite side of the river, is it not?—Yes.

2571. There is nothing upon the same side of the river at all after the second one which you mentioned, namely, the Rotherhithe float?—No.

2572. The others are upon the opposite side?—Yes, they are.

2573. Which is the farthest of those two?—The C Float; the Limehouse Reach vessel.

2574. Is there any float beyond that?—Not belonging to the fire brigade.

2575. Does any one live on board the vessel?—Nobody lives on board altogether; we are on board on watches in our turn.

2576. But there must be somebody on board?—Some one is continually on board.

2577. What does he do?—He keeps the fire alight and the boiler ready.

2578. How many men would be on board for the purpose of doing that?—There are two men for the purpose of doing that.

2579. I think

J. Kelly.
11 May 1876.

2579. I think you stated that it took you 15 or 20 minutes to get under weigh?—Yes.

2580. What do you have to do to get afloat?—The boat has to go ashore and get the men, and engage strangers if we are going to a fire, during which time the men on board are getting up the steam.

2581. Where would the other men be who were not on board the vessel?—Three of them would be at home in bed.

2582. But how far from the float?—About 20 yards from the water's edge on shore.

2583. Then you could give notice to them at once?—Directly.

2584. Now taking the distances between those vessels which are placed upon the river, how long would it take you with your vessel to get to the place that was on fire?—That would depend upon how far off the fire was.

2585. But what would be the longest interval from one float to the other, taking half the distance between them?—They average a mile and a half apart; that would be three-quarters of a mile either way that they would have to go.

2586. What time would it take you to get up to any spot within the distance, from the place where you are?—If the tide were with us we could do the distance in five minutes.

2587. And then you would have to add that to the 15 or 20 minutes in which you would be getting under weigh?—Yes.

2588. Have you always a full supply of water?—Yes, being afloat we have.

2589. You have been in the brigade ten years, I believe?—Yes.

2590. Has it not occurred within those ten years that you have not been able to get water?—The float I am upon I have only belonged to three months, so that it is not within my experience.

2591. You do not know whether there was any case of that kind?—I do not know.

2592. You have not been told of it?—No.

2593. You have nothing to do with the plugs that turn the water on upon the land?—No.

2594. Have you ever had anything to do with that?—No.

2595. *Chairman.*] Is there telegraphic communication between your land station, where your men are, and the other land stations?—There is a land station at Rotherhithe very close to the float, and all messages are transmitted to us through that station.

2596. But it is not in communication telegraphically with your house or float? No.

2597. Are you ever liable to be called off from your float to assist the land station at any fire they may have to attend?—Yes, one of the six men is out every night at the land station of the district.

2598. The others are liable to be called upon to assist the land station at any inland fire, I presume?—Yes.

James Morris, called in; and Examined.

J. Morris.

2599. *Chairman.*] You are a Second-class Fireman at the Camberwell Station, are you not?—I am.

2600. What number of men are attached to that station?—Four men and an officer.

2601. And it is a second-class station, is it not?—Yes.

2602. Have you a steam fire-engine there?—No.

2603. Have you only a manual engine there?—We have two manual engines.

2604. And how many men do you send out with a manual engine?—Four in the daytime.

2605. And at night?—Sometimes two and sometimes one.

2606. You are obliged, are you not, to leave one man at least at the station for communication with other stations?—When it is possible, but sometimes we have to close the station altogether.

J. Morris.

11 May 1876.

2607. Does that arise from a man being sick at your station, or from all your men going away with one manual engine?—Sometimes a man is out with a message, or on leave, or sick.

2608. In that case you have to close your station on receiving a call, and sending away your manual engine?—Yes.

2609. I suppose upon that occasion you would telegraph to the nearest station which was in communication with you, stating that you were all called away, and asking assistance from that station?—Yes.

2610. Have you heard or read the evidence given before this Committee?—I have.

2611. As regards the superannuation question, do you agree with the other members of the brigade who have been examined with reference to what the brigade would like to see established?—I do.

2612. Do you think that a superannuation scheme, such as they have suggested, would tend to strengthen the brigade, by keeping the men in it?—It would.

2613. And that, at present, the fact of not having such a scheme makes men careless about leaving the brigade?—It does.

2614. How long have you yourself been in the brigade?—Eight years.

2615. Did you enter as a fourth or a third class fireman?—As a fourth-class fireman.

2616. How long have you been a second-class fireman?—I have been a second-class fireman since August last.

2617. So that it has taken you nearly eight years to rise to this rank?—Yes, it has.

2618. What are the hours you have to work at your station; what are the ordinary duties?—The average time I should think would be about 16 hours a day.

2619. Is that in consequence of the station being short-handed?—Yes.

2620. Are you more short-handed than the stations which have been before the Committee in the examination of the previous witnesses?—Our station is rather more short-handed than most other stations.

2621. What would be the number of men required at your station to bring it up to the present strength of the larger stations?—There are some stations which have the same duties to perform as our station which have six men where we have four men.

2622. That would be an officer and six men, would it not?—Yes.

2623. Do the 16 hours represent the largest amount of duty that is recorded in any of the days that you have had at your station?—I have not calculated it, but I should presume that it is about 16 hours a day; that is the station and escape duty, and cleaning, independently of being in attendance for other calls.

2624. You are in the same position as other stations are in this respect, that in addition to the 16 hours' duty you are always liable to be called for fires?—Yes.

2625. Do you get any leave from your station?—Yes, when we can be spared, which is not very often.

2626. How much leave have you had in this year, for instance, so that you could get away?—I think that in March last was the last leave that I had.

2627. Was the leave for any length of time?—It was for about 15 hours, I should think.

2628. Since then you have not had any leave?—I will not be certain whether I may not have had four hours' leave since.

2629. But practically with that exception you have been always on duty, or liable to be called for duty?—Yes.

2630. That is one of the complaints the men make, that they can never count upon any amount of time for themselves?—It is.

2631. If that condition of things were altered, do you think it would tend to strengthen the brigade very much?—Yes, I do.

2632. Since you have been in the brigade, do you know many men in your own ranks who have left the brigade?—Yes, I do.

2633. Have those men left on that account?—They have left upon various accounts.

2634. Do you know as a fact whether the question of the want of superannuation,

tion, and the number of hours that they have to work, entered into their reasons for leaving?—That question has very materially entered into their reasons for leaving.

2635. Do you think that the pay of the rank which you are in is satisfactory to the men?—The men do not complain so much of the present wages as they do of the stagnation of promotion.

2636. What the men would like is a more rapid flow, and that it should not take so many years to rise from one rank to another?—Yes.

2637. What is your pay?—My pay is 31 *s.* 6 *d.* a week.

2638. That would be 4 *s.* 6 *d.* a-day?—Yes.

2639. And you think that the men would be satisfied with that rate of pay if they had a prospect of a rapid promotion and of a pension held out to them?—The men do not complain about the wages, although they are not thoroughly satisfied with them.

2640. That is to say, that everybody would naturally like more money if it was offered him?—But you will see that I have served eight years, and I receive less remuneration for my eight years than men who had previously served a corresponding time.

2641. Will you explain that answer?—Taking the eight years' service that I have completed, I have received less remuneration than men who had served eight years formerly.

2642. You mean on the former scale of pay?—Yes.

2643. When was the scale altered?—The scale was altered in 1872, which brought our pay equal to the old firemen, but it was not at all increased.

2644. The alteration only brought the pay up to the old scale?—Quite so, and that is allowing the engine money.

2645. And are there many of the old brigade who were paid upon the increased scale?—The men in the old brigade never served that time without getting promotion.

2646. Therefore it is the slowness of the promotion that you complain of, and if we adopted a pension scale, and allowed promotion in so many years to the higher ranks of the men, that would satisfy the men in your opinion?—I think so.

2647. Are there any other points which your men have talked over, and would like to put to the Committee?—I think not.

2648. Having heard or read all the evidence which has been given before this Committee, you approve of a scheme of superannuation, and you think that the flow of promotion is too slow, and the hours of labour are too long?—Yes; the promotion is a very important thing.

2649. Mr. *Ritchie.*] Are your duties at the Camberwell Station lighter than those at the Old Kent Road Station?—No.

2650. Or lighter than those at Brixton?—No.

2651. In point of fact, you have two men less than at either of those stations?—Yes.

2652. With the same amount of duty?—Yes.

2653. Do you know any feature of the work at those stations to account for that?—They have steamers attached to those stations.

2654. Does it require more men to work a steam fire-engine than to work a manual engine?—It does.

2655. Then that is the reason why they have more men?—Just so.

2656. Practically, at night they have double the number of men available under the most favourable circumstances that you have?—That is so.

2657. You could only send out two men, could you?—That is all.

2658. Have you had to close your station?—Yes, we have.

2659. Have you had to close it more than once?—Yes.

2660. When was the last time you had to close the station?—We had to close the station on the 21st April.

2661. Where did you take the men to?—To Lordship-lane, Dulwich.

2662. How far was that from your station?—I should think about a mile and a half.

2663. How long was your station closed?—Thirty-eight minutes.

2664. For 38 minutes there was no one at your station at all?—No.

2665. When the station was opened, was it opened by your return, or by getting

J. Morrts.

11 May 1876.

getting assistance from other engines?—The station was opened by the return of the engine.

2666. Did you telegraph to some other station for engines?—Yes, previously to the engine starting.

2667. Did any engine arrive for 38 minutes?—Yes, it did.

2668. Did you telegraph for the assistance to come to the station or to the fire?—To the fire.

2669. And when that assistance came you returned to your station?—We could have returned without the assistance arriving, as it happened.

2670. Have your men any point which they have desired you to put forward before the Committee with regard to misconduct as affecting superannuation. I understand that you wish the pension to arrive at its maximum in 25 years, but that unless incapacitated a man is not to take advantage of it until he has served 30 years. Do you think that any misconduct of a man between the 25 years and the 30 years should deprive him of his pension?—No.

2671. Not even gross misconduct?—There may be a line drawn there as regards misconduct such as theft.

2672. That is to say, upon conviction before a magistrate for a felony or anything of that kind?—Yes.

2673. But that no ordinary cases of misconduct should deprive a man of a pension which he had really earned?—Certainly not.

2674. *Chairman.*] Do you think a man would have really earned a pension at 25 years' service?—Yes.

2675. I understood the brigade to represent that what they wished was that after 25 years' service, if a man were incapacitated by illness, he should take a pension at the rate of the maximum amount?—Yes.

2676. But that he should not be entitled to claim a pension as a right upon leaving the service until he had completed 30 years?—That is so.

2677. Therefore the men would not suffer any injustice if they were discharged between 25 and 30 years' service for misconduct, because they would not have been entitled to it unless they happened to be invalided?—I think you will find in the chief officer's examination that he has already stated that the men would forfeit a portion of the pension in that case.

2678. At an earlier period of service than 25 years?—Yes, for misconduct.

2679. Mr. *Ritchie.*] But suppose a man were to remain in the brigade over 30 years, then you do not think that, except in cases of gross misconduct, he should be liable to be deprived of the pension which he had earned?—Certainly not.

2680. Do you think if the question with regard to superannuation, and the addition of more men, so that the men should incur less confinement, were satisfactorily settled, that you would be able to retain men in the service?—I think so.

2681. And that that would increase the efficiency of the brigade?—Yes.

2682. What is the largest number of hours that you have been on duty yourself lately?—I have been a whole week without having my clothes off.

2683. Was that lately?—Yes, three weeks ago.

2684. You had not your boots, your clothes, or your belt off?—My belt was off, but not my boots.

2685. Night and day for a whole week?—Yes.

2686. How did that happen?—That was because I had to do extra night duty. The night when it fell to my night in bed we had a man on leave, and I had to take his turn.

2687. That was not made up to you?—It cannot be made up. We have three nights out and one in bed, each man, and if I am deprived of that night in bed I must complete the seven, and if we were to make it up the other man would have to do it, so I may as well do it as he.

2688. Mr. *Onslow.*] Do you find that many of the men who enlist between 17 and 20 stop in the brigade?—I never knew one to join at 17.

2689. Those men who stop in the brigade enlist after the age of 20, I suppose?—I should think so.

2690. Do you know what becomes of them, and where they go?—A great many go to sea again.

2691. By joining a merchant ship they get no superannuation?—They do not.

2692. Do you think that the sea is more popular than the brigade?—No, I do not, but a great many seem to prefer it. I should not, for my own part.

2693. Sir *James Hogg.*] You stated that you had been once for a week without taking your clothes off; you are very kind to each other in the brigade, are you not?—I daresay.

2694. One man would take another man's duty, would he not, if he wanted to go away for an extra day?—Yes.

2695. Did you take this man's duty in order to let him go away, or where you placed on duty whether you liked it or not?—I was placed on duty.

2696. You do make arrangements with one another, do you not?—No.

2697. Do you not go to the head man and ask for leave, and say So-and-so will take my turn; is it not the case that the men will really help a comrade to get leave?—In no case are we required to do another man's duty, unless he is absent over 24 hours on leave.

2698. I think you stated that from your experience you find that some of your comrades leave the brigade because they like a seafaring life?—No, I did not intend to say that.

2699. You said that some of them preferred to go to sea, but that you did not?—They prefer the sea to the fire brigade.

2700. They must earn a livelihood somehow?—No doubt.

2701. If a man goes to sea, he goes to sea as a sailor, instead of remaining in the fire brigade?—Yes.

2702. But you prefer the fire brigade?—Yes, I do. I was a navy man, and therefore if I leave the brigade I am bound to get my living elsewhere, because I cannot go back to the navy; whereas if a merchant seaman join the brigade, he can go back to the sea whenever he likes.

2703. Does a man who has been in the navy never go to work in the merchant service?—Yes.

2704. There is nothing to prevent him?—There is nothing to prevent him; but for my own part I have a dislike to the merchant service. I prefer the navy.

2705. Sir *Andrew Lusk.*] You say you have 16 hours' work a day?—Yes, I have.

2706. What do you do in the 16 hours?—Providing it is my night in bed to-night, in the morning if there are reports to be sent, I should start about a quarter to six to the Kennington-station. Were there not a report I should start at five minutes to six to assist with the escape. Then duty commences on the station at seven in the morning and ceases at seven at night. Then I go out with the escape and come home at six in the morning. I get home at about a quarter past six, have a wash and begin work, and am employed until dinner time.

2707. You said that you worked 16 hours a day?—I am endeavouring to show how it arises. After finishing work I wait until I go with the report in the afternoon; that will be about a quarter past five, providing I am not called for any other purpose, but I am not sure for any moment. Then I start for report, and get back shortly before I come on duty at seven at night.

2708. You state that you have been at sea?—Yes. I have.

2709. And you know that, having been at sea, your duties are something like a sailor's; you have to take watch and watch, do you not?—Certainly not.

2710. A sailor is always on duty, is he not?—He is not.

2711. If a gale of wind comes he is liable to be called up, is he not?—Yes, that is so.

2712. What do you do when there is no fire?—Wait for them; it is not the attending fires which is the labour to the brigade, it is the waiting for them.

2713. But supposing there are none for a week, that is not very hard work, is it?—That is the case at the station where I am at present.

2714. Why do the men want to leave the brigade when the work is not very hard, except at times?—The want of a superannuation scheme is a grievance.

2715. But, suppose you are at sea, where is your superannuation then?—I should receive superannuation in the Navy.

2716. That is not a very good reason to give, because the sailors in the merchant

J. Morris.

11 May 1876.

merchant service do not get superannuation; do you think that those men who leave you go, as a rule, to sea, or do they go into better situations in the City, for instance?—I should say that the majority who leave the brigade do not go to sea; they go to situations of all descriptions; it is surprising what you will see an old fireman turn to sometimes.

2717. They are well disciplined men; I know that they are taken for porters in banks?—They are taken to fill different employments in various places.

2718. What do you mean by promotion; do you mean promotion to a higher rank or more pay?—More pay, and a higher rank also.

2719. Suppose you are at sea or on a railway, you know very well that everybody could not be promoted to be a captain, or a mate, or a guard. How could you all be promoted?—In the brigade we cannot all expect to be officers, but naturally after having served a number of years, if they raised the number of first-class firemen, and a man is a thoroughly efficient fireman, he likes to come into the first class.

2720. Does he not now?—I do not see any possibility of his doing so.

2721. Do you think that mere length of servitude should be the test of a man's fitness for a place, or should Captain Shaw pick out the man he thinks best adapted to fill it?—I think the present system is very well so far, in taking the senior men.

2722. You think that Captain Shaw should not pick out the man he thinks best adapted for the place?—I think that is best left to Captain Shaw.

2723. But that is a question for the men to consider; do you think that promotion should go by seniority, or by what Captain Shaw, or the Board of Works may think of the aptitude or the ability of the man?—Sometimes favour is not always shown to the best man, and therefore upon the present system as you rise in number, you are raised.

2724. Mr. *Stevenson.*] Do you find that men who have attained the highest pay are as ready to leave the brigade as those who are in the lower grades of pay?—No.

2725. When the men reach the highest grades of pay they remain in the brigade?—Yes.

2726. It is because the men in the highest grades are so well satisfied with the brigade that they do not go away and so make room for the men below them; is not that so?—That is so.

2727. The difficulty in the lower grades is that the men in the higher grades are so well content with their places?—Yes.

2728. You say that some of the men leave the brigade; is it those who are old, or those who are younger, who leave their positions?—As a rule, it is the younger who leave.

2729. Does it often happen that men who have been there seven, eight, or ten years leave?—Yes.

2730. Are there many such cases?—Yes, there are.

2731. What number of such cases would you say there are?—It is impossible for me to say how many, but it is frequently the case.

2732. Mr. *Locke.*] How long have you been there?—Eight years.

2733. Of course, if any of you felt that you would be bettered by leaving, you would go?—Yes.

2734. But I suppose there are some men very fond of it?—There are men who have a liking for the brigade.

2735. I suppose there are very few men who dislike it much?—I think there are very few who really dislike the working of the brigade, as far as the business goes.

2736. What is it that the men do dislike?—The grievances are, as I think it has been already stated, first, the want of a superannuation scheme. It would be a very great consolation to the men to know that they will be provided for in case they get disabled, or that if they have served all their younger days they will have something to look forward to when they are old; and, secondly, the want of more men, and the number of hours they are on duty.

2737. In regard to that, what do you want?—I think that 200 more men would ease us considerably, provided there are no more stations also established.

2738. What number are you now?—We are under 400 all ranks.

2739. With

2739. With 200 additional, that would make 600?—Yes, that is so.

2740. You think that that would be quite sufficient, do you not?—Yes, for the present number of stations and escapes.

2741. That would be a very great relief, I presume, for those who are employed, inasmuch as they would not be obliged to sit up so long?—Quite so.

2742. But that would depend a good deal, to use a common expression, upon whether there is business going on or not; supposing there are very few fires, you would not be worked so hard?—No, but the men never object to a few fires; in fact, we rather like a fire than not; it gives us a little life; it is the waiting for them that we dislike.

2743. But when you have no fires, you have nothing to do but to do a little duty, and go to bed; what difficulty do you suffer from under those circumstances; you take it easy then?—We do not go to bed very often; we only go to bed twice in eight days, if all goes well.

2744. Is there not some arrangement with reference to when you should go to bed?—We go to bed one night out of four.

2745. And on Sundays have the men to be on duty all day and all night?—Sunday is just the same as Saturday to us, barring the cleaning. We do not clean any more than is necessary on Sunday. The duty is exactly the same otherwise.

2746. What are the hours of going to bed?—After roll call at nine o'clock I have to relieve the men to supper on duty, and then (that would be about half-past nine, I can go to bed, and providing I am not called, I can sleep until shortly before six.

2747. That is plenty of time?—Yes, quite so; that is plenty of time, but we do not get that often enough.

2748. Have you no sleep at all the other three days?—Yes, what we get is when we are fully dressed, as I am at present.

2749. What you meant to say was, that that is the rule unless you are called up?—Yes, upon those nights.

2750. Are you always called upon the other nights?—Yes, I am on duty.

2751. Then you go to bed in the daytime, do you not?—No.

2752. Do you mean to say that for a whole 24 hours you never go to bed at all?—Not for four days and three nights, and then if I get deprived of the night I get deprived for the whole week.

2753. *Chairman.*] What you wish to represent to the honourable Member is, that you have really only one night out of four upon which you can count upon going to bed?—Yes.

2754. And that even that one night you may be deprived of if called out for duty?—Yes.

2755. And that then you may not get any sleep until the end of the week?—Yes.

2756. Sir *James Hogg.*] You lie down, do you not, when on duty?—Yes, we do.

2757. *Chairman.*] You have your clothes sufficiently on to get up to do duty at once?—I lie down just as I am at present.

2758. An honourable Member asked you a question with regard to the difficulty of men higher up in the brigade being so contented with their pay that they do not leave, and that therefore there is no promotion. May it not be that the officers who have been long in the brigade, and in the receipt of those higher wages, having no provision for their old age, hang on as long as they can to get the higher rate of wages?—That is the case.

2759. And you believe that by the adoption of the system of superannuation you would get a greater flow of promotion, because the officers when they felt that they had done real good service, and were entitled to a pension would take it, and thus give promotion in the brigade?—I think they would.

2760. Whereas now, as the honourable Member inferred by saying that being in the receipt of those wages they were so satisfied that they remained on, they do not like to leave because they had nothing to look to at the termination of their service?—Yes, of course, the first-class firemen frequently leave; if they did not under present circumstances, I should never become a first-class fireman.

2761. But the lower ranks leave more rapidly than the higher ranks, because they

J. Morris.
11 May 1876.

they can get wages in other situations, greater probably than they are receiving in the brigade?—That is so, and of course the officers have served all their younger days, and they could not go out and get a situation as the younger men could.

2762. It is more difficult for a man when he is 40 or 50 years of age to begin life again in a new occupation?—Yes.

2763. And therefore the officers stop in the brigade to receive the wages which the brigade gives them as long at they can, and thereby stop the flow of promotion?—Exactly so.

George Wittwer, called in; and Examined.

G. Wittwer.

2764. *Chairman.*] You are, I think, a Third-class Fireman?—I am.

2765. How long have you been in the brigade?—Five years.

2766. How long have you been a third-class fireman?—Two and a half years.

2767. It took you nearly three years to rise from the fourth-class rank to the third, did it not?—Yes, it did.

2768. You have heard the evidence which has been given in this room by the witnesses, have you not?—Part I have heard, and part I have read.

2769. With regard to the superannuation question, do you agree with Captain Shaw and the previous witnesses with reference to what the brigade wishes?—I entirely agree with their evidence.

2770. You think that the recommendations which have been made, if carried out, would satisfy the briga de?— think so.

2771. Do you think that they would tend to keep men in the brigade?—I think so.

2772. Is it your own feeling that you would remain in the brigade if you had a prospect of ultimate pension?—If I had a prospect of that I certainly should remain in the brigade.

2773. With regard to the hours of work, do you agree with the other witnesses as to the length of those periods?—Yes, generally.

2774. And as to the desire of the men of your rank in the brigade that they should have more time off duty?—Yes.

2775. Do you think that that is another of the complaints?—The excessive hours of duty is one of the chief complaints.

2776. With regard to the rate of wages, do the men feel any complaint on that head?—I think the men are very well satisfied with their wages, provided there was a superannuation scheme.

2777. You think that the wages are sufficient to keep them in the brigade, but that the men are anxious that when their term of service is passed they should be able to look forward to some pension?—I think so.

2778. Is there anything that the third-class firemen would like to state beyond that to the Committee?—No, I think not.

2779. In fact, having heard or read the evidence, you thoroughly indorse those statements which are placed before the Committee?—I do.

2780. Mr. *Hardcastle.*] Is it one of your duties to attend to the fire-escape?—Yes.

2781. Do you take your turn with the other men?—Yes; every alternate night it comes to my turn.

2782. Have you ever been successful in saving life with your fire-escape?—No; I was never fortunate enough. I have never been called upon to do that duty.

2783. Have you ever been present when life has been saved with the fire-escape?—No, I think not.

2784. *Chairman.*] You do not know, perhaps, whether there have been any fires in your district, since you have joined the brigade, where life has been lost?—I cannot remember any.

2785. Not in your own district, where you have been employed?—There was one fire at Lambeth where eight lives were lost.

2786. You were not called upon duty on that occasion?—No; the fire was in the morning after the escape duty was done.

G. Wittwer.
11 May 1876.

2787. That would prove rather a necessity for the fire-escapes being constantly on duty; it would seem to show that there is the same necessity for them practically in the morning as there is at night?—Yes.

2788. Mr. *Onslow.*] Could you have saved life if the fire-escape had been ready?—I think so, if the fire-escape had been close handy.

2789. Could you have saved more than one life?—Very possibly.

2790. *Chairman.*] You mean, I presume, that lives were lost in an upstairs room?—Yes.

2791. And if the fire-escape had been present, you think there would have been a chance of getting at those rooms before the fire had got the mastery?—Yes.

2792. Sir *Henry Peek.*] I understand that men in charge of fire-escapes can always sleep the greater part of the night?—Yes, they can.

2793. In their clothes?—Yes.

2794. Mr. *Ritchie.*] You have to get out and walk about sometimes to keep yourself warm?—Yes, on cold nights.

2795. Sir *James Hogg.*] You have a blanket, have you not?—Yes, but all the warmth that there is in our boxes comes from our own bodies.

Duncan Fitzmaurice, called in; and Examined.

D. Fitzmaurice.

2796. *Chairman.*] You are a Fourth-class Fireman, I believe?—I am.

2797. How long have you belonged to the brigade?—I have been in the brigade 2½ years.

2798. Were you previously in the merchant service, or in the navy?—In the merchant service.

2799. Having heard the evidence which has been given with regard to the superannuation question, do you agree with the evidence that has been given that the men in the brigade are anxious to have a superannuation scheme established?—Yes, that is one of the principal points.

2800. One that you feel yourself?—Yes, I do.

2801. Would it tend to induce you to remain in the force if you could look forward after a period of good service to a fair pension?—Yes.

2802. I suppose the men of your class also lay great stress upon the question of the number of hours work?—Yes, we complain of too much duty.

2803. Since you have been in the brigade what periods of duty have you had?—I do regularly 24 hours' duty at the station, three nights with the escape, and one night in bed.

2804. So that you have, as the last witness stated he had, one night out of every four in which you can go to bed?—No, I have only one night out of five.

2805. One night station duty, and three nights' escape duty?—Yes.

2806. Is that the same with all the other fourth-class firemen?—With all the other men at the station I am attached to.

2807. We distinctly understand that you have only one night out of every five?—Yes.

2808. And therefore all the other four days and nights you are bound to be dressed and liable to be called for duty?—Yes.

2809. What are the number of hours duty which you absolutely complete in a day?—I do 24 hours on duty at the station.

2810. But what are recorded as the duty hours; as I understand, some duties are done lasting one hour and some lasting two; some witnesses have stated that they have 14 hours of recorded duty, and some 16 hours; I want to know what number of hours of recorded duty you have?—I suppose our duties average 14 or 15 hours recorded.

2811. The rest of the time though you are not upon what are marked down as duties you are liable to be called?—Yes, we are liable to be called at all times.

2812. Are the wages satisfactory to the men on joining the brigade?—Yes, the wages are perfectly satisfactory, only we wish a re-arrangement of the classes.

2813. What are your wages a day?—3*s.* 6*d.*

2814. That, you think, is a sufficient inducement for men to join, but when they

D. Fitzmaurice.

11 May 1876.

they have joined the inducement to stay on would be a quicker promotion, more time that you can count on when off duty, and a superannuation scheme?—That is so.

2815. And that, you think, is the feeling of the rest of the men in the fourth class?—Yes.

2816. Mr. *Ritchie.*] You have a great deal of escape duty to do?—Yes, three nights.

2817. Can you sleep comfortably in those boxes?—Yes, in the summer time.

2818. But in the winter time, can you?—In the winter it is very uncomfortable.

2819. Have you to get up and walk about to keep yourself warm?—Yes, to get the blood circulated.

2820. Have you ever seen men come home after spending a night in those boxes with their faces almost black for want of circulation, owing to the cold?—I have not known of that.

2821. Sir *Henry Peek.*] What station are you attached to?—To the St. Pancras Station.

2822. Then why should you have one night more escape duty than the other officers have talked of; are you a short-handed station?—No.

2823. Are there more escapes to be manned?—We have three escapes.

2824. How many men have you at the station?—Six men.

2825. Mr. *Hardcastle.*] Have you ever saved a life by means of the fire escape?—No.

2826. Or been present when one has been saved?—No.

2827. Not when sleeping in the fire-escape box, but when sleeping at the station, would it be a considerable addition to your comfort if you were allowed to take your boots off?—It would add to our comfort, but not to the expediency of our getting away.

2828. How long would it take to put your boots on?—Perhaps half a minute.

2829. I should have thought the fatigue of sleeping without your boots on would have been very much less than with them?—The time of putting them on would be so much time lost.

2830. *Chairman.*] Of course, every moment is of value in bringing your escape to a fire?—Certainly.

2831. When you said that you had not been present at the saving of life by the escape, you will agree that the escape might be exceedingly useful in saving life?—Yes, undoubtedly it would.

2832. Mr. *John Hardy.*] Have you ever seen life lost at a fire?—Yes, I have.

2833. Was that because there was no escape?—No; there were two escapes not 500 yards off. I was at one myself, and I was not called at all.

2834. Was life lost because there was no escape there?—It was not sent for.

Thursday, 18*th May* 1876.

MEMBERS PRESENT:

Mr. Clifton.
Mr. Forsyth.
Mr. Hardcastle.
Mr. John Stewart Hardy.
Mr. Hayter.
Mr. Herbert.
Sir James Hogg.
Lord Lindsay.
Mr. Locke.
Sir Andrew Lusk.
Mr. M'Lagan.
Mr. Onslow.
Sir Henry Peek.
Mr. Ritchie.
Sir Henry Selwin-Ibbetson.

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

Mr. *Harry De la Hooke*, called in; and Examined.

Mr. *H. De la Hooke.*

18 May 1876.

2835. *Chairman.*] WHAT office do you hold under the Metropolitan Board of Works?—I am Chief Assistant Clerk.

2836. Are you the clerk to the Fire Brigade Committee of that Board?—I am.

2837. Have you been so for a long time?—I have been so since the fire brigade came under the Metropolitan Board of Works.

2838. You are well acquainted with the late proceedings of the Board of Works in connection with the fire brigade?—I am.

2839. Before the transfer to the Metropolitan Board of Works, the fire brigade was maintained by the fire insurance offices, was it not?—It was.

2840. And when the Metropolitan Board of Works took the brigade from those fire offices, the Board by their Act were entrusted with the duty of extinguishing fires and protecting property from fire in the metropolis?—That is so.

2841. By what funds was that brigade supposed to be maintained; the fire offices contribute still under a section of that Act, do they not?—The fire offices contribute to the expense. The funds at the disposal of the Board are these: First, a rate of one halfpenny in the pound over the whole metropolitan area, and then a contribution from the fire insurance offices, at the rate of 35 *l.* per 1,000,000 *l.* for all property insured in the metropolis, and thirdly, an annual contribution of 10,000 *l.* from Her Majesty's Government.

2842. By the same Act, the Fire Brigade Act, all the powers which had previously been entrusted to the local authorities with regard to regulating the plugs and other appliances were transferred to the Metropolitan Board of Works, were they not?—They were.

2843. They could require the plugs to be applied to the mains, and other pipes in certain districts, could they not?—They could.

2844. Where no distances are prescribed, the Act provides that 100 yards shall be the limit; is not that so?—That is not provided by the Fire Brigade Act, but it may be provided by an old Act which placed the plugs under the local authorities.

2845. All of whose powers were transferred by the Fire Brigade Act to the Metropolitan Board of Works?—Yes, they were.

2846. That Act of 1847 had been previously amended by the Act of 1852, I believe?—Yes, by the Metropolis Water Act.

2847. And that Act of 1852 obliged a constant supply in the metropolis upon

Mr. *H. De la Hooke.*

18 May 1876.

upon the requisition of four-fifths of the owners and occupiers?—Yes, I think so.

2848. Provided always it were not shown that more than one-fifth were unprovided with cisterns and other appliances for preventing waste?—Yes, I believe that was so.

2849. There was an Act passed, was there not, in 1871, after an inquiry by a Committee of this House?—There was.

2850. What alterations were made in the law by that Act with regard to the Board of Works; they were empowered, were they not, not only to require, but to enforce a constant supply, on requisition, in any district?—The Board had the power to give notice to the water companies that it would require a constant supply, in any district, within four months from the time of giving the notice.

2851. Was there any alteration made on the question of plugs in that Act of 1871?—Yes, there was an alteration. The Act provided that, after a company had given a constant supply in any district, they might call upon the Board to state what plugs or hydrants the Board wanted in a particular district for the purposes of the fire brigade.

2852. By that you mean that the word "hydrant" was introduced into that Act?—The word "hydrant" was introduced into that Act.

2853. Enabling the Board not only to enforce the putting down of plugs, but to oblige the company to put down hydrants there?—Yes.

2854. The cost, both for plugs and hydrants, resting on the Metropolitan Board of Works?—That is so.

2855. Were you present at the discussion which took place before that Committee at the time of the alteration of the Act?—No, I was not present in the Committee-room in 1871.

2856. Are you aware of the speech of the learned counsel for the Metropolitan Board of Works on that occasion?—I have seen an extract from it. I have not read the whole speech.

2857. My impression was, from having been on that Committee myself that the argument which the Metropolitan Board of Works used on that occasion was, that it would be their duty to enforce this supply if a clause were put into the Act?—That may have been stated by the learned counsel for the Board. I do not find anything in the Board's records which adopts that view.

2858. Has your attention been called to the Report of the Select Committee which sat upon that Bill in 1871?—I have not read the Report lately. I think it is possible I may have done so when it was issued.

2859. I wished to know whether it had been brought to the notice of the Board that all former Committees and Commissions which had sat upon the matter had recommended, and that they themselves strongly recommended the adoption of the constant-supply system?—Yes.

2860. Following that I should like to know what action the Metropolitan Board of Works have taken, subsequently to the Act of 1871, with regard to enforcing or requiring a constant supply?—The Board has decided not to require a constant supply to be given by any company; that is to say, it has decided not of itself to take any steps under the existing Act or under the existing regulations, because the regulations and conditions under which a constant supply is given are not considered satisfactory by the Board. If the Committee will allow me, I will read a short extract from a Report of the Board, which would explain the Board's reasons for not doing that. This is a report made by the Works and General Purposes Committee of the Board upon the 3rd February 1873. It concludes by saying: "Your committee, as the result of their deliberations, are of opinion that, having regard to the imperfect state of legislation, by which no real and effective constant supply is secured, the exclusion of the Board from any jurisdiction which could be exercised in favour of the consumers, and further, to the great cost which the regulations would impose upon the owners of property, and the almost unlimited authority placed in the hands of the water companies, the Board should not take any steps at present with a view to giving notice for a constant supply of water in any of the districts of London; that in all probability the attention of Parliament will be directed to the working of the Act, and the probable need of its

of its amendment, so that by some more satisfactory legislation a sound system of well-regulated water supply, independent of the views and commercial interests of companies acting for separate districts differently organised may be secured." That is a summary of the reasons which have actuated the Board in not initiating any measure for a constant supply under the Act of 1871.

2861. Therefore, notwithstanding the Report of the Committee which, instead of leaving it in the hands, as it was before, of the owners and occupiers, entrusted to the Metropolitan Board of Works the power of enforcing a constant supply; and, notwithstanding that that Report, and the reports of all former Committees, had pointed out the great advantage of that system, and had entrusted the Board with this power, they have from that time abstained from enforcing it?—They have abstained from initiating any action.

2862. Are you aware whether any of the companies themselves have initiated a system of constant supply?—Yes; two of the water companies have, the East London Company and the Kent Company.

2863. The Act allowed the companies, after a given time, supposing they were not called upon by the Metropolitan Board of Works, to do so of themselves, to initiate the constant supply system?—Yes; that is to say, a concurrent power was given to the companies with the Board; the action of the companies was not to be in default of any action by the Board, but the action might be initiated either by the Board or the water companies.

2864. And the companies have themselves, as you say, initiated the constant supply?—Two of the water companies have.

2865. Has the East London Company, on several occasions, called the attention of the Metropolitan Board of Works to the fact of their having so initiated a constant supply?—Yes.

2866. Has your attention been called to a letter from the East London Water Company, which has been submitted to this Committee, dated the 17th December 1872?—Yes.

2867. What action did the Metropolitan Board of Works take upon that letter?—That letter was referred to a committee for consideration, and at that time the whole question of the water supply, and what action the Board should take under the Act of 1871, was before a committee of the whole Board, which made that report from which I read an extract just now.

2868. Did that committee sit in 1872?—Yes, that committee sat in 1872.

2869. And the report was not made until 1873?—That was so.

2870. That was subsequent to another letter of the East London Water Company, which they had sent in December 1873 to the Board?—No, it was not subsequent to that. The report I read just now was made to the Board in February 1873.

2871. But no notice, I believe, was taken either of the application upon the part of the East London Water Company in 1872 or 1873, or of a further application on the 14th of January 1875, with regard to that?—Notice was taken of all of them.

2872. There was simply an acknowledgment of the letters?—There was an acknowledgment, and they were all thoroughly considered.

2873. Was that report which you have referred to of 1873 sent to them as an answer to any of their letters?—No, that report was not sent to them. I think, as a matter of fact, that this letter of the 17th December 1872, beyond an acknowledgment of its receipt, did not have an answer dealing with the questions raised; but I think before the Board had arrived at a conclusion with reference to what action they would take with respect to providing hydrants, a further letter was received from that company.

2844. That was the letter of the 31st December 1873, the year following, was it not?—I do not know the precise date.

2875. Have you before you a record of the Minutes of the Board at the time those letters were considered?—I have.

2876. Would you give the Committee the minutes of the meeting which considered the letter of the 17th December 1872, the first letter?—Yes, that letter of the 17th December 1872, was laid before the Board upon the 20th December, the first meeting of the Board subsequent to its receipt. The letter was referred to the Fire Brigade Committee for consideration in connection

Mr. *H. De la Hooke.*

18 May 1876.

nection with the reference previously made to them, of the question of providing hydrants.

2877. Was any action taken by the Board upon that?—The committee considered the letter upon the 14th January 1873, and at the same time the committee considered a report made by the chief officer of the fire brigade and the Board solicitor upon the subject, and the letter and the report were both printed and circulated among the members of the Board. Again, upon the 11th February 1873, the matter was considered by the committee, and they then arrived at this resolution: "That the further consideration of the letter should be adjourned until the general question of a constant supply of water throughout the metropolis is in such a position as to enable the Board to deal with the subject of hydrants."

2878. That is to say, that the Board came to the determination upon receiving notice from this company, that they had placed over 100 miles of their district under constant supply, and that they were proposing to place a still larger area under that supply; that they would not deal with the matter until all the companies and all the districts were consulted with a view of bringing them under constant supply; is that what that implies?—Yes, I think it may be taken to imply that; that they wished to deal with the whole question.

2879. Was the company who had made the application to the Board informed of that decision?—No, I think not.

2880. Then, on the 31st December 1873, that is the year subsequent to the first letter, they not having received any such intimation, the East London Water Company again communicated with the Metropolitan Board of Works upon the subject, did they not?—I do not remember the letter of the 31st December 1873. I will not say that such a letter was not received, but I have not it with me.

2881. It is a letter that was signed Elihu Bates, written to Mr. Wakefield, Clerk of the Metropolitan Board of Works, Spring Gardens, and in that letter it says, "It will be recollected that you were, by my letter of 17th December 1872 (to which the directors have not as yet been favoured with any reply), informed that there were then in the district alone of this company 150 miles of mains in, at least, 100 miles of public streets, and in addition 50 miles of service pipes of 5 inches diameter, all which mains and services were under constant supply, and on any of which fire hydrants might at any time during several years then past have been placed"?—Yes; that letter was received.

2882. Have you any minute of the Board of that letter being considered?—That letter was laid before the Board, but beyond that the whole question was then under consideration; I do not find that anything was done with that letter.

2883. Have you any minute showing that that letter was referred to the Fire Brigade Committee, or considered by the Board at all?—The only thing is, that it was referred to a committee which had the subject under consideration.

2884. But I understood you to state just now that the Committee which had the subject under consideration made that report in 1873; this letter was in 1874?—The report made by the committee in February 1873 dealt with the question of bringing a constant supply into action for the purpose of supplying houses; and the committee then recommended the Board, and the Board adopted the recommendation, not to initiate any proceedings for bringing a constant supply into operation. But then, apart from that question of a house supply, the whole question of what action the Board should take towards providing hydrants for extinguishing fires as a separate branch of the subject was under consideration by the committee, and it was that branch of the question which the letter refers to. That I may say has been under the continuous consideration of the Board until the beginning of this year. It was not until the beginning of this year that the Board came to a decision as to what they would do upon the question of providing hydrants.

2885. Then I am to understand from that that the Board, having had the power of providing a security for the metropolis against fires entrusted to them by Act of Parliament; having had the recommendations before them of almost every Committee or Commission which had sat upon this question, including the Committee of 1871, who sat upon the Bill of that year, in favour of the constant

constant supply as affecting the question of putting out fires, have notwithstanding that come to a decision not to avail themselves of the constant supply where it is given them by the water companies. Is that so?—The Board have not decided not to avail themselves of a constant supply, but they have decided not to undertake the putting down of hydrants throughout the metropolis.

2886. The constant supply has been pointed out to them as existing over the district which I have quoted from one company alone at the present moment?—Yes, but that is not a constant supply under the Water Act of 1871; that is simply that the mains are charged, I think.

2887. The statement in the letter is that this one company alone has 150 miles of mains and 50 miles of service pipes so charged in their own district. Has your attention been called to Major Bolton's report of this year?—I have seen Major Bolton's reports from time to time, as they are made to the Local Government Board; copies are sent to the Metropolitan Board.

2888. Are you aware that Major Bolton states that there is a total length in London of 666½ miles which are at present under constant supply available for fire purposes?—I have seen a statement to that effect.

2889. The passage of his report this year is, "I would observe that it is anticipated that greater safety from fires would result from constant supply, since it would enable the use of hydrants instead of fire plugs, and thus more rapidly and efficiently extinguish fires: hydrants might now, and for some time past, have been substituted for fire-plugs upon about one-third of the entire mains of the metropolis, which are constantly charged. The number of miles of streets containing mains constantly charged, and upon which hydrants could at once be fixed, in each district of the metropolis, are as follows;" then he proceeds to state them. Of course your Board are aware of that report?—Yes.

2890. They are, therefore, aware that it is not a question of dealing only with the number of miles pointed out to them by this one company, but that there are a number of miles, amounting to 666, in the metropolis at present to which they might apply hydrants, which are said to be more available for the purpose of extinguishing fires?—Yes, the Board is aware of that.

2891. Then, under those circumstances am I not justified in saying that the decision which the Board have come to practically amounts to this, that they will not consider the question of constant supply, and fixing hydrants upon the mains, until the whole of the town is brought under that system?—The resolution of the Board, come to upon the advice of the Board's engineer, Sir Joseph Bazalgette, and upon the advice of Captain Shaw also, is, that the constant supply when given is not under such conditions as would justify the Board in incurring a large expenditure upon hydrants; that is to say, it has not been clear to the Board at all that if a system of hydrants were established in any district of any water company the use of engines could be dispensed with in any way, or that any saving to counterbalance the great expense could be effected.

2892. From that I gather that the Board consider it a question which depends entirely upon their being able to supersede the present system of engines by hydrants?—To supersede the engines partly; that is to say, that the immense expenditure requisite for providing hydrants throughout the metropolis should not be incurred unless the provision of those hydrants would enable fires to a great extent to be extinguished without the use of engines in every case.

2893. But the question whether the establishment of hydrants would assist the present engines or materially diminish the number of fires, by bringing greater power to bear upon them in a shorter time, has not entered into the consideration of the Board; they have dealt with it simply as a question of money, comparing the expense of fixing of hydrants with doing away with the engines?—The question of cost has certainly been a considerable element. Will the Committee allow me to read a few words, which embody the advice given by the Board's engineer to the Board. I will read a passage from the Report of the Works and General Purposes Committee, of the 21st February 1876, and the reply to the letter of the East London Water Company: "The Board's engineer distinctly advises, with reference to the use of hydrants for the purpose of extinguishing fires, that they would not be of real practical advantage to the Board, unless a sufficient pressure of water were

Mr. *H. De la Hooke.*

18 May 1876.

ensured, and that this cannot be the case so long as the management of the water supply is under the independent control of different companies." That report embodies the engineer's advice to the Board, upon which the Board has proceeded.

2894. Will you hand in that Report?—I will. (*The same was handed in.*)

2895. That practically amounts to this, that, setting aside the question of whether hydrants applied to those pipes under constant supply would materially increase the safety of the town from fire, they have decided against it, because the pressure is supposed not to be sufficient to justify them in expecting that hydrants would supersede the use of engines?—Yes, that is the case. I may also say that Captain Shaw has expressed himself to the same effect as the Board's engineer.

2896. But both those opinions have been expressed upon the ground, as I understand you to say, that the water supplied by hydrants under the existing pressure through the streets, though it might facilitate the working of the brigade, would not practically do what it has done in Manchester; that is to say, supersede the engines of the brigade?—That is so; but I should say further that it has never been shown to the Board by Captain Shaw that any advantage would be obtained from the use of hydrants, such as to justify the Board in incurring the expenditure, quite apart from the question of whether the hydrants would supersede the engines or not.

2897. What I want to get at is, whether the suggestion of a number of Committees of the House of Commons and Royal Commissioners upon this subject for adopting the constant supply by the use of hydrants for extinguishing fires, has been considered by the Board as giving increased facilities, or whether they have looked upon it simply as increased expense?—They have endeavoured to look upon it from every point of view.

2898. The result has been what you say, that until they see their way to afford a pressure, which will enable them by hydrants to supersede the use of engines, they are, as at present advised, not prepared to adopt the constant supply and the use of hydrants for the purpose of the fire brigade?—That is so.

2899. The letter which you have just handed in was a letter written in reply to a subsequent letter of the same Company, was it not; of the East London Company, of the 14th of January 1875?—Yes, it was.

2900. Where again that Company pointed out the way in which they had been complying with what was supposed to be the advice of the different committees, and had been bringing their district under a constant supply, which might be utilised by the application of hydrants?—Yes, that was the effect of the letter.

2901. When first the powers were handed over to the Metropolitan Board of Works, on the question of the re-arrangement of stations, I understand from the evidence of Captain Shaw that there was a reduction by one, I think, of the stations in the centre of the town at that time?—It had been decided, I think, just before the stations were handed over to the Board, to do away with one of them; that was closed directly after the Board took the brigade over in accordance with the previous decision.

2902. Was the attention of the Board called to that reduction by anybody who was opposed to the reduction at the time?—No, I am not aware that it was; I am speaking of the station in Wells-street, Oxford-street.

2903. I mean at the time that the Board of Works first took over the stations, there were, as I am given to understand by the Papers that we have here, a certain number of stations within the centre of industry, as I may call it, the docks, and the principal places of industry in the heart of the City; those stations were reduced upon the brigade being taken over by the Metropolitan Board of Works; Farringdon-street was one of the stations which was so reduced?—Those stations, Farringdon-street, for instance, and one or two others, were not closed by the Board until three or four years after the fire brigade was taken over by the Board, and not until there had been a re-arrangement of the stations, which provided for the protection of the localities in some other way.

2904. Was the complaint that was made by the fire offices at that time made with regard to the Wells-street case?—No; when you referred to a station being discontinued

discontinued immediately upon the Brigade being handed over to the Board, I remarked that the station in Wells-street, Oxford-street, was the one that was discontinued, and upon the advice of Captain Shaw; but when you speak of stations being closed, against the closing of which the fire insurance companies protested, or as to which they complained, then I know that you speak of that in Farringdon-street, and one or two others.

2905. The fire insurance companies did remonstrate against those stations being closed, did they not?—Yes; the fire insurance companies remonstrated against those stations being closed.

2906. Have you any Minute of that question being considered by the Board?—I have.

2907. What was the answer the Board gave?—The answer the Board gave was to this effect: "That the Board having undertaken the protection from fire of the whole of the metropolis, is making such arrangements as will, in its opinion, best provide for such protection, and that for this purpose some re-arrangement of the existing stations is necessary; that the localities in which the stations are proposed to be discontinued will be protected by other stations, either already established or about to be established, and that the Board in all its arrangements is actuated by a desire to give the best possible protection to every part of the metropolis."

2908. Have the Metropolitan Board of Works increased the number of stations subsequently?—In the place of the Farringdon-street Station to which you referred, the Board has established a station a little further north in the Farringdon-road, which was considered to cover the district which had been protected by the Farringdon-street Station, and also a further district northward, from which Farringdon-street was rather too far removed.

2909. How far was that from the original station in Farringdon-street?—I cannot tell you the exact distance. I think it is about a third of a mile further north.

2910. The same companies have upon several occasions made suggestions to the Board, have they not?—The Board has received suggestions from time to time from the insurance companies.

2911. There was one suggestion which I asked Captain Shaw about, upon which I should like to ask you what action was taken by the Board, namely, the protection of the river side by smaller vessels than the existing floats; can you give the Committee any information upon that point; has that matter been brought to the attention of the Board by the fire insurance companies?—Yes, in the year 1872 the attention of the Board was called to that matter by the fire insurance offices.

2912. Have you a minute of the action of the Board upon that matter?—Yes. I should say that Captain Shaw advised against the adoption of the suggestion of the fire insurance companies as regards the provision of small floating steam-engines; that is to say, such engines as the fire insurance companies recommended, having the propelling and pumping machinery upon one bottom; and apart from that, the insurance companies were informed that the increase of the protection afforded to water-side property was a matter that depended mainly upon the state of the Board's finances, which would certainly not at that time have admitted of any increased expenditure in that respect.

2913. That has not been always Captain Shaw's recommendation to the Board, I think?—Captain Shaw has always advised against the provision of small floating steam engines, such as the fire insurance offices recommended, having the propelling and pumping machinery on one bottom, because he said that they would draw so much water as to render them practically of little advantage beyond that obtained from the large floats which there are at present.

2914. At the same time you are probably aware of Captain Shaw's recommendation of the 11th of July 1874?—I am.

2915–16. In that, as I understand it, he recommends that there should be a certain number of steam launches which should be able to take the small rafts quickly to the scene of a fire, which amounts practically to very nearly the same thing as the recommendation of the fire insurance companies, both of them pointing to the fact that the fault of the existing floats really lies in their draught of water, and in their being so long before they can be got under weigh?—Yes; and with regard to Captain Shaw's report, to which you refer,

Mr. *H. De la Hooke.*

18 May 1876.

of the 11th July 1874, I should say that that has been since that time, and is now, receiving the careful consideration of the Fire Brigade Committee.

2917. That is to say, that the attention of the committee having been called in 1871 and 1872, as I understand, by the fire insurance companies, to the want of protection on the river, owing to the want of smaller vessels than the existing floats, and that having been endorsed really by the report of Captain Shaw in 1874, in 1876 the question is still being considered?—But the suggestions of the fire insurance companies, in 1872, were not favoured, if I remember rightly, by Captain Shaw, and this suggestion of his in July 1874 was a new suggestion, which had no reference to the recommendations of the fire insurance companies, but which he brought up to the Committee mainly on account of the economy which he thought would be secured by not keeping the fires continually alight on board the large floats. His ground for making that recommendation, as stated in his report, was that an immense expenditure in coal would be saved, and also in wear and tear of machinery. That was the ground upon which he based this recommendation, which was different from that of the fire insurance offices.

2918. He states also in that recommendation that the adoption of those smaller vessels would result in their being available for use during the early stages of a fire before the larger vessels arrived?—Yes, he mentions that as an advantage. And I may state that the reason why this report of Captain Shaw's has been so long under consideration without any decision being arrived at, has been principally a desire on the part of the committee to reconsider the suggestion of the fire insurance offices, which was that there should be small steam floating fire-engines having all their machinery on one bottom, and to see whether that would not be a better thing than this; that is to say, the committee has gone into the matter very carefully and has taken a great deal of trouble, and has had designs from the principal fire engine makers, and has had conferences with them, and has gone a great way towards arriving at a decision. The matter has not been at all lost sight of.

2919. You mean that the subject has been constantly brought before the notice of the Board since 1874?—Since 1874.

2920. Mr. *M'Lagan* (through the *Chairman*).] The recommendation of the fire insurance companies was that a certain number of small vessels drawing less water than the big floats, and capable of having their steam got up in less time, should be placed upon the river in order that the water might be brought to bear upon the fires more quickly than it could be by the large floats?—That is so.

2921. And that supposing the fire to continue and become a serious fire, the large floats should after a certain period be enabled to come up and add their strength to the appliances already brought to bear by the smaller vessels?—Exactly.

2922. I thought you stated that the vessels recommended by the insurance companies would draw more water than the large floats?—I did not say they would draw more water than the large floats, but (I am speaking of Captain Shaw's advice) that they would draw more water than would render it at all desirable to spend money in purchassng such vessels. Would the Committee allow me to read a short paragraph from the report made by Captain Shaw, which would put the thing more clearly than I have done. This is upon the suggestion made by the fire insurance companies that small floating steam engines should be obtained.

2923. *Chairman.*] What is the date of that report?—This is a report by Captain Shaw of the 16th December 1871. Captain Shaw says, "It appears to me that this resolution" (that is, the resolution of the fire insurance companies) "must have been arrived at many years ago, not on the date which it bears, as it makes recommendations concerning a matter which has long since been attended to by the Board at very considerable cost. Perhaps this will best be understood in figures as follows: The value of the floating fire-engines, when handed over to the Board, was 3,200 *l.*; it is now 11,500 *l.*, and all the appliances, such as hose, branches, ropes, chains, &c., &c., which were formerly very deficient in quantity, have been increased in even greater proportion. The suggestion about small steamers seems to have been made without consultation with

Mr. *H. De la Hooke.*

18 May 1876.

with any practical person, as it assumes that a small vessel must necessarily have a lighter draught of water than a large one, which is by no means the case, as the Committee will remember that the reason of Messrs. Samuda making the hull of the paddle float so large was to ensure her having a light draught, and that even after going to such a size, they have not thoroughly accomplished the object, and have since recommended that she ought to be lengthened." That was the advice of Captain Shaw, upon which the committee proceeded in dealing with the suggestions of the fire insurance offices. The paddle float, to which Captain Shaw refers as having been made by Messrs. Samuda, was a large float which the Board ordered very soon after the fire brigade came under the jurisdiction of the Board, with the view of having it of lighter draught than any of the other floating engines upon the river. (*The Report was handed in.*)

2924. You are aware that it was stated by the fire insurance offices that one of the objects of these small vessels was the same as was endorsed by Captain Shaw in his Report of 1874, namely, that of bringing appliances to bear upon a fire at an earlier stage than could be the case with the larger vessels?—Yes; but still Captain Shaw, at that time, advised the committee against the adoption of the fire insurance companies' suggestions, and it was not until the month of July 1874 that he brought up that report to which you referred just now, in which, although he bases his recommendation partly upon the reason which you have just mentioned, he states that he is actuated mainly by motives of economy.

2925. I understood that the idea was initiated mainly for the purpose of saving fuel, owing to the necessity of keeping the fires banked. The Board states as one of its reasons for carrying out the recommendation of the Committee of 1872, the bringing speedier appliances to bear upon a fire if it should occur?—Quite so, but still it was not until July 1874, that Captain Shaw made any recommendation to that effect.

2926. Has the attention of the Metropolitan Board of Works, to your knowledge, ever been called to the power of creating junctions as between the water companies, so that their different supplies might be used in case of fire?—Yes, it has; that was one of the suggestions made by the fire insurance offices.

2927. Was that considered of value by the Board?—The Fire Brigade Committee of the Board took Captain Shaw's advice upon that point, and adopted it. If the Committee wish me to read what Captain Shaw's advice was, I can do so. This is his comment on the recommendations of the fire insurance offices: "It is suggested that the mains of the several water companies should be capable of being connected in case of need for fire extinguishing purposes, but no suggestion is made as to the legal or other power by which this arrangement could be carried out. I have reason to believe that the water companies are not without some means of assisting each other in cases of emergency, but as the committee seemed to be unwilling that I should place myself in direct communication with them, I have only been able to consult such turncocks and inspectors as I have recently met with at fires."

2928. Then no communication took place between the companies at that time in order to ascertain whether they could by concert among themselves, bring their joint supplies into use for the purpose of extinguishing fires?—No; no communication was made to them.

2929. Although the attention of the Board had been called by the fire insurance companies to its being desirable?—Yes, the committee referred all the suggestions of the fire insurance companies to Captain Shaw, and the whole of Captain Shaw's recommendations were adopted.

2930. But as I understand that report you have just read, Captain Shaw was restricted in some way by the Board from getting such information as would have enabled him to judge of the utility or otherwise of this additional supply?—I am not quite certain what that refers to. I do not find that there was any instruction to Captain Shaw not to communicate with the water companies. Whether or not it was thought desirable that he should not do so at that time, I do not know, but there is more of the report here, and it all goes against the insurance companies' suggestions.

2931. But that was without communication with the water companies with reference to the possibility or practicability of carrying out what undoubtedly must

Mr. *H. De la Hooke.*

18 May 1876.

must have given a larger supply at any given point?—Yes, that report was based upon Captain Shaw's knowledge of his requirements, and how they were met practically by the water companies.

2932. Sir *Henry Peek.*] Does the London Salvage Corps represent the fire insurance companies?—Yes, it does.

2933. That is to say, when you talk of communicating with the fire insurance companies, you communicate with the London Salvage Corps, as being their mouth-piece?—Generally that is the case. The chairman and committee of the London Salvage Corps are elected by the different insurance companies, and when they communicate as a body with the Board the communication generally comes through the Chairman of the Salvage Corps.

2934. *Chairman.*] What I wished to ascertain was this, whether upon a representation of anything which would apparently give greater facilities for extinguishing a fire coming to the notice of the Board, whatever source it comes from, Captain Shaw was restricted by the Board, as seems to be the case from the report you have read, from communicating with the people who would have to carry it out; that is to say, the water companies, and thereby ascertaining whether they could give these additional facilities?—I find nothing which shows that Captain Shaw was restricted, except that he says: "the committee seemed to be unwilling that I should place myself in direct communication." But then he goes on to state: "My recollection, however, of a conversation with some superior officials of a water company a few years ago on this subject is very distinct."

2935. Did he not state that all the information he obtained was from turncocks, and people of that sort?—He says that at first, but then I was going to read on to show that he had had communication with superior officials: "Notwithstanding the absence of information on the part of the turncocks, I am inclined to believe, as I have stated, that the water companies have some means of assisting each other in case of emergency."

2936. I think I am not mistaken in saying that it was in 1871, just after the passing of the Water Act, that the Metropolitan Board of Works came to that decision on Captain Shaw's advice?—Yes, in December 1871.

2937. In 1871 an answer was sent to the application on the part of the fire insurance offices?—Yes, it was.

2938. Founded upon the report of Captain Shaw, in which he states that some time previously he has had conversation with people in authority, upon which he founds these expressions of opinion?—Yes.

2939. Has the question of telegraphic communication as between the police stations and the fire stations ever been brought under the notice of the Board?—Yes; that was brought under the notice of the Board at the same time by the insurance offices.

2940. Was it upon any recommendation of Captain Shaw, or otherwise, that that was not thought advisable?—The answer which was given to the insurance companies was based strictly upon Captain Shaw's advice. Will the Committee allow me to read what Captain Shaw said upon that point in December 1871: "We have for several years had direct telegraphic communication between the head quarters of the police and this station" (that is Watling-street); "but it so happens that we have not in all that time had as much as one first call to a fire from them, and I am therefore not encouraged to expect much help in this way, but should rather be inclined to look to a further development of our own system for the purpose of obtaining early intelligence of fires."

2941. The question of the telegraphic communication as between those police stations and the fire brigade stations, has been subsequently to that brought under the consideration of the Board. Was it not in 1872 brought under the notice of the Board also?—I have no note of that being done in 1872.

2942. There is a letter of 1st January 1872, and one on 9th April 1872, from the insurance offices?—Then the one in January 1872 was probably in reply to the letter from the Board.

2943. Has Captain Shaw more recently than that brought the matter before the attention of the Board?—I am not aware that the subject of telegraphic communication between the police and the fire brigade stations has been brought since that before the Board.

2944. I gather

Mr. *H. De la Hooke.*

18 May 1876.

2944. I gather from Captain Shaw's evidence given to this Committee, that he considers it would be advantageous, whatevor his recommendations may have been to the Board previously?—He has not made a recommendation to the Board upon the subject.

2945. Now, with regard to the question of the men of the brigade, have any petitions with regard to the number of hours of over-work been submitted by the men of the brigade to the Board?—No, I think there has been nothing of that kind since 1868.

2946. Was there no petition to the Board of Works in February 1874, submitted by the men?—A petition for a system of superannuation was submitted at that time.

2947. I refer to the 28th February 1874; a petition in which they say: "We beg further most respectfully to submit to the consideration of your honourable Board the fact that the duties of the brigade are exceedingly laborious, and injurious to health. The men for its service are selected almost entirely for the soundness of their constitutions, and are, before being admitted to its ranks, subjected to a most strict medical examination, but, notwithstanding this, a great number break down, and, in every case, have left the service shattered in health, and altogether incapable of following any employment"?—That passage occurs in a memorial by the officers and the men of the fire brigade, asking the Board to establish for them a superannuation scheme.

2948. That was in the letter of the 28th February 1874?—Yes.

2949. Has the question of the length of hours, that is to say, of over-work, of which we have had evidence on the part of the men, been under the consideration of the Board?—I think the attention of the Board has not been specially called to the matter since 1868.

2950. You think that notwithstanding the facts which have been placed before us by the men, and also by Captain Shaw, with regard to the number of hours of work that the men have to go through, and also to the almost impossibility of their getting any leave at all, or any relaxation from duty, the subject has never been under the consideration of the Board, with a view to increasing the number of the brigade?—I do not think the attention of the Board has been specially called to that matter by Captain Shaw, or by the men, since the date to which I refer in 1868.

2951. I would ask you to turn to Captain Shaw's Report of 2nd November 1867; do you see in the latter part of that Report, which I suppose was submitted to the Board, that Captain Shaw says, "I have been endeavouring to the utmost of my power to reduce expense by hiring as few men as possible to fill up the stations, but the regular hands have been complaining bitterly of want of rest"?—That was before 1868.

2952. But you are aware that complaints have been submitted to the Board showing what is still the condition of the men with regard to over-work?—I am aware that previously to 1868 such complaints were made.

2953. On the 25th November 1867 the Board's attention was again called to the matter, was it not?—Yes; but if you will kindly look at the Report by Captain Shaw, of the 10th October 1868, he says that if the Board appointed a certain number of men which he suggested, he was quite confident that the result of such a step would be the means of removing all reasonable ground of complaint on the part of the men, and would at the same time be attended with the most beneficial results to the business of the Board. That is at page 13 of the Appendix.

2954. The proposal was to increase the brigade by a number of 50 men, was it not?—Yes, it was.

2955. But Captain Shaw says: "I am of opinion that by making a few changes in some of the outside districts, it will be quite possible to carry on the duties with an addition of 35;" then he says, "I should most respectfully recommend that the 35 men now temporarily employed be permanently enrolled; and I am quite confident that the result of such a step will be the means of removing all reasonable cause of complaint on the part of the men;" was that done?—Those 35 men were appointed by the Board directly after that Report.

2956. At what date were they appointed?—That Report was made to the committee on the 10th October 1868, adopted by the committee on the same day,

Mr. *H. De la Hooke.*

18 May 1876.

day, and adopted by the Board at the next Board meeting, three days afterwards.

2957. How many stations were there at that time?—At that time there were two floating stations and 49 land stations.

2958. Is that the same number of stations as there are at present?—The same number of land stations, but there are now four floating stations.

2959. But notwithstanding that number of men having been added, and the stations not having been increased, the work of the men is represented to us to be as severe as it was pointed out to be at that time?—Yes; but that representation has not been made to the Board.

2960. Are you aware that since 1869, although the stations have not materially increased in number, the number of fire-escapes requiring the services of men has very largely increased?—The number of fire-escapes has been considerably increased, and also the number of men to work them.

2961. Can you give me the number of men in 1869 after that addition of 35 men had been made?—The number of men in the brigade on the 1st January 1869 was 373.

2962. And what was the number on the 1st January of this year?—Upon the 1st January this year there were 395 men.

2963. So that there has been an increase of 22 men?—Yes, there has.

2964. And what was the number of fire-escape stations?—The number of fire-escape stations was 90 on the 1st January 1869, and upon the 1st January this year it was 106, being an increase of 16 fire-escape stations.

2965. And what you state is, that, to your knowledge, notwithstanding the evidence which this committee has had before them with regard to the number of hours in which the men have to work at the different stations, no representation with reference to that length of work has been made to the Board since 1868?—No, no complaints have been made. There was a mention of it in the memorial about the superannuation, but that was not a complaint at all.

2966. That was part of the statement made when they were trying to enforce another complaint?—Quite so.

2967. You are present at all the meetings of the Fire Brigade Committee, are you not?—I am.

2968. At that committee, as we understand, from Captain Shaw's evidence, he is also present for the purpose of advising the committee on those points?—He is.

2969. From your recollection, are you aware whether that subject has been considered by the Board on his recommendation, or has the notice of the Board been called to this fact by Captain Shaw without a formal report being made?—No, I am not aware of Captain Shaw having ever called the attention of the Board to overwork on the part of the men since 1868; that is to say, he has often said that the men worked very hard and that kind of thing, but I have not heard Captain Shaw prefer a complaint to the Board.

2970. In 1872, when Captain Shaw recommended a very much larger scheme, not only of men, but of appliances, he did not ground his recommendation in any way upon the over-work of the men?—No, he did not; that Report was made to the Fire Brigade Committee at the request of the committee, that Captain Shaw should state what he considered requisite for an efficient fire brigade from his point of view.

2971. What date is that?—That is the 14th October 1872.

2972. At that time he did not ground his scheme upon the fact that his men were over-worked at that moment?—Not at all.

2973. I should like to ask, with regard to the question of stations, and the building of stations, and the lodging of men in the houses, whether the minutes of the Board will show what the action of the Board has been upon that point. As I understand, upon the 24th November 1865, there was a resolution of the Board with regard to the stations, and the lodging of the men in those stations?—The resolution to which you refer, of the 24th November 1865, was one of a series of general resolutions passed by the Board, with reference to the terms on which the brigade should be taken over, and the duties to be required of them, and one of the resolutions was that, as a general rule, the men should all be required to live at the stations to which they were attached.

2974. The advantages of that had been, of course, brought to the notice of the

the Board by Captain Shaw?—Yes. I ought to say with regard to that, that in the month of March 1868, on the recommendation of Captain Shaw, the Board decided that it would not in future provide married men's quarters for firemen below the second class; that is to say, that only officers, and first and second class firemen should be provided with married men's quarters, and that if men in the lower class got married they must provide accommodation for their wives and families at their own expense.

2975. Did Captain Shaw, representing the efficiency of the brigade, point out to the Board any disadvantage in having his men outside the stations, on their coming to that decision?—No; the decision was come to on the recommendation of Captain Shaw.

2976. You mean that notwithstanding the resolution, which was one of the number on which the brigade had been taken over, that it was advisable that all the men should live in the stations; subsequently the Board, upon Captain Shaw's recommendation, came to the resolution that a certain number of them should live outside in lodgings?—The resolution of the Board in 1865 was not that the men should live in the stations, but that they should live at them; they could not all have lived in the stations at that time, or under the establishment of the old fire insurance companies, because in some cases a station was an ordinary house, with just room for two or three men, the others living in neighbouring houses.

2977. But the Board admitted that it was advisable in the interest of efficiency that where it was possible it should be done?—Yes.

2978. What number of stations have the Board built subsequently to that date?—I cannot give the exact number; I think about 30 stations have been built.

2979. Have those stations, which the Board have built since that date, carried out the idea that the men should be housed upon the premises?—Not the whole of them; for this reason, that by the Fire Brigade Act of 1865, the Board's expenditure on capital account was limited to 40,000 *l.*, 7,000 *l.* of which went to the redemption of mortgages on buildings handed over by the insurance companies, leaving only about 33,000 *l.*; the Board considered that a fixed limit, and until the year 1869, when that limit was removed, the Board, in building new stations, was considerably hampered by that limit which prevented them from building stations quite so large and perfect as they otherwise would have done, but since the difficulty was removed in 1869, the stations built have been such as to provide for all the men living at them.

2980. All the stations built since 1869 have provided for the number of men who were stationed there; is that so?—Yes, I believe that is so.

2981. But of the 30 stations, it was stated that about one-half do not provide that accommodation?—I should think the proportion would not be so great as that, but still there are several stations at which there is not sufficient accommodation for the men.

2982. Do you know whether the men have ever represented that it was a hardship upon them to have to live in lodgings outside the stations?—I do not remember that they have, at this moment.

2983. Upon the ground that limited as they must be to a very close area, in order that they might be quickly upon the spot, they were practically forced very often into unhealthy or very dear apartments?—I do not remember the men making any such representation.

2984. Then with regard to the memorial containing the complaints of the men, has the Board had before it the question of rewarding the men who have distinguished themselves at all by merit?—The Board has had before it the question of rewarding the men who have distinguished themselves in saving life from fire.

2985. According to a Return which has been handed in, there are, I think, 137 such cases?—Yes.

2986. Has the Board had before it the fact that the men are, to a certain extent, dissatisfied that no notice has been taken by the Board of their having been so recommended?—I think that all that the Fire Brigade Committee has had before it is this, that the men were rather dissatisfied with the way in which the rewards have been dispensed by the Royal Society for the Protection of Life from Fire. I ought to say that Captain Shaw has never recommended the committee to give any pecuniary rewards to men, but after the fire-escapes

Mr. *H. De la Hooke.*

18 May 1876.

were handed over to the Board by the Society for the Protection of Life from Fire, in 1867, that society continued its existence, although it ceased to provide fire escapes in the metropolis, one main purpose of its continuing in existence being to give rewards to persons for saving life from fire, and they have always been anxious to obtain from the Board a list of the firemen who have distinguished themselves, in order that they might reward them.

2987. But the 8th clause of the Fire Brigade Act, which handed over that power to the Metropolitan Board of Works, gave them power to make regulations for giving gratuities to the men for extraordinary services, did it not?—Yes, it did.

2988. Do not the men say that they dislike being rewarded by an outside society, and that they would rather have that recognition of their services which is recommended by Captain Shaw, in the form of a badge, or in any other way coming directly from the people under whom they were employed?—Yes, that representation has been made, but not until some dissatisfaction was expressed by them with the selection made by the society of the men whom they would reward.

2989. It was on the men expressing dissatisfaction that out of 137 cases only about 60 had been acknowledged by the society, that they stated that they should have preferred their services being recognised by their own body?—I would not say after 137 cases, because this representation was made some years ago when there had not been so many cases.

2990. Has the Board taken any action on the recommendation which Captain Shaw made, on the 5th November 1868, with regard to a badge being given for these services?—Upon this recommendation being made by Captain Shaw the Fire Brigade Committee instructed a gentleman who was then the architect to the fire brigade, and a man of some artistic taste, to provide a design for a medal, or something of that kind.

2991. At what time was the architect entrusted with this duty?—That was in 1869, I think, but he died a short time afterwards, before he had prepared this design, and practically the badge died with him. I think the fire brigade considered after that that the men were satisfied with the rewards they obtained from the society.

2992. Sir *Andrew Lusk.*] The rewards did not cease, did they?—No, they have been given to this day.

2993. *Chairman.*] As I understand, to this day a private society gives rewards to the men whom they select out of the list given to them by Captain Shaw for merit, in the shape of distinguished services at fires?—Yes.

2994. The representation of the men is, that they would prefer that that merit should be recognised by their own authority rather than by an outside society?—Yes, that representation was made some years ago, but I think the committee have understood that that dropped: it was thought that the men were more satisfied with those rewards than they had been previously.

2995. Do I understand you that the badge was suggested by Captain Shaw, and that certain steps were taken in order to carry that out, which failed in consequence of the death of the person to whom it was intrusted?—Yes.

2996. And the Board are led to believe that, subsequently to that, the men are satisfied with the way in which the private society deals with them, and do not now, as they did then, desire that their case should be considered by their own authority?—Yes, I think once after that date the subject was brought before the Fire Brigade Committee again, upon a complaint of some of the men that the society had not rewarded all those whom Captain Shaw recommended, and the Fire Brigade Committee took some trouble about it. They wrote to the society and told them what the complaints of the men were, and a deputation from the society came up to the committee and talked it over, and expressed their regret that there should be any dissatisfaction, and their desire to meet the views of the Board and of Captain Shaw.

2997. In what year was that?—That was in 1871, I think.

2998. How long was that subsequent to the death of the architect when the subject of the badge dropped?—He died in 1870, I think.

2999. And the men renewed their complaint the year after that, did they not?—The men simply complained that the society did not reward all the men whom Captain Shaw recommended; they did not make a fresh request for a badge.

3000. Had the Board had an opportunity of considering, before the architect died, any design with regard to the subject?—No, he had not brought up any design.

3001. How long did he undertake the work before his death?—Probably a year.

3002. And the Board then thought that the system which has been adopted in many other forces, such as the Post Office, for example, of rewarding distinguished merit, could not be met by any consideration on the part of themselves as the authority under whom the brigade work?—No, the Board has not decided that, but simply the question has not been brought before them. I think the Board has been under the impression that the men were now satisfied with what the society do, and the question of giving a badge of merit has not been again urged upon the Board. The Board has not pronounced against it at all.

3003. But the matter was brought up again, as I understand, upon the question of how the rewards have been administered subsequently to the death of the architect?—Yes, but the Board had an interview with a deputation of the Society for the Protection of Life from Fire, and the society expressed a desire to carry out, as far as possible, all the recommendations of Captain Shaw for rewards; and I think it was considered after that that the matter was settled satisfactorily to the men.

3004. Now let me ask you a question with regard to the men's complaint as to the superannuation or pension list. The Committee understand that at the time of the transfer in 1865, when Captain Shaw communicated with the Board of Works upon the subject of superannuation, the men seem to have implied that their interests were sufficiently guarded by the 8th section of the Act. Is that your impression?—No mention was made to the Board or committee at that time of establishing any pension or superannuation scheme.

3005. Was the attention of the Board called upon the 27th September 1865, to the subject?—The attention of the Board was called to the matter on the 27th of September 1865 in these terms, if the Committee wish me to read it: "The only matter on which the officers and men desire information before joining the new force is the subject of superannuation, including the mode in which it is proposed to provide for the widows of those killed on duty. It is understood that the present superannuation fund, which amounts to a considerable sum, is to be handed over to the Board of Works, and the men are anxious to know how much they would be called on to contribute in future, and also whether each man, on leaving the force for any cause except on a pension, will be allowed, as hitherto, to withdraw the whole amount paid by him to this fund, and whether, in case of death, his executors can receive the same. If this point can be settled satisfactorily, I have no doubt that the whole of the men will be prepared to transfer their services to the Board of Works." Upon those two points I would say that the Board passed a resolution, with regard to the widows of men killed on duty, that in every case the widows should be provided for by a pension; and with regard to the so-called superannuation fund, the suggestion of the men was adopted to the full; that is to say, the amount they were to be called upon to contribute in future to the fund was precisely the same as they had been contributing; and every one on leaving the force for any cause, except on a pension, was allowed, as hitherto, to withdraw the whole amount paid by him to that fund.

3006. From that I understand that the Board at that time decided, in cases of death, to deal with the widows by pension?—The Board decided that the widows of men killed whilst on duty should be dealt with by pension.

3007. Now we will take that case first; I see in the list which has been returned by the Metropolitan Board of Works, that among those killed on duty there is only one man who died leaving a widow?—I remember the case; it is the case of a man named Ford.

3008. In that case a pension was not granted, but a gratuity was granted; is that so?—The Board did propose to grant a pension for life, but within two or three days of the death of the man such a large sum was subscribed by the public that it brought to the widow an actually larger income than the pay her husband received while he was living. The Board gave her, I think, 1*l.* a week for a year, until the time when she came into possession of the income from this fund.

3009. The Board considered themselves justified in dealing with the public

Mr. *H. De la Hooke.*

18 May 1876.

contribution as a satisfaction of the claim that rested upon them?—Yes, that is so.

3010. Is that likely, do you think, to encourage private benevolence?—I do not know that it is for me to express an opinion upon that point.

3011. But the fact remains, that in the only instance in which the Board has been called upon to exercise the resolution they came to with regard to granting pensions to the widows of men killed in their service, they have avoided, if I may so call it, the fulfilment of that condition, because the public came forward in a liberal manner and subscribed to the unfortunate woman?—That is so.

3012. With regard to those who have died in the service without being killed, was any resolution come to on the part of the Board as to how their cases should be met?—No, there was not.

3013. They were left to be dealt with on their merits, I suppose?—I presume so.

3014. In those cases, as I perceive from this list, the amounts awarded have principally taken the form of gratuities?—The Board has given a gratuity where widows and children have been left.

3015. Upon what basis do they calculate those gratuities?—The gratuities are not always calculated upon any particular basis.

3016. How was it calculated in the case of Legg?—It was calculated in this way: the amount which he had paid in to the savings fund, or the superannuation fund, as it was then called, was 22*l.* 9*s.* 6*d.*; that sum, with an equal sum in addition, was given to his widow, making about 45*l.* altogether.

3017. Was that system adopted in all other cases where men have died in the service?—Not quite the same, because the Committee will see that they are round sums in many cases; but still, roughly, it was about that; as nearly as possible upon that basis.

3018. What I wished to arrive at by that question was whether the amount of the subscriptions was returned doubled in each case, or was the matter treated upon any other ground?—The amount of the subscription was always returned to the family, and in addition the sums mentioned in the table. In many cases the amount granted by the Board was in excess of the amount which had been subscribed by the fireman to the fund.

3019. Would that be the case with regard to Mr. Maidman, the first-class engineer who had served 39 years, and whose family received 40*l.*?—I think in that one case the man's subscription to the fund probably amounted to a little more than 40*l.*

3020. And therefore in that case the Board did not hand him a round sum; it was below the amount of the subscriptions?—The Board handed back the whole of the subscriptions with the sum of 40*l.* in addition, and beyond that 5*l.* was given on each case for funeral expenses.

3021. Now turning to those who are discharged from the service on account of infirmity; I will take the case which comes second, because the first case explains itself. The case which comes second is the case of the man Joseph Perkins who served 30 years and 10 months, and received a pension of 14*s.* a week. Upon what basis was that calculated?—That was not calculated upon any definite basis.

3022. Is there any definite basis upon which those pensions are granted?—There is no definite basis at present.

3023. Not with regard to service?—No.

3024. In that the Metropolitan Board of Works differ from other forces, such as the police authorities, inasmuch as they leave it to the decision of the moment without any fixed scale upon which they work their pension list?—There is no fixed scale at present beyond the one which is proposed by the Board, and which has been handed in to this Committee.

3025. You are aware that under a scale, such as that adopted in the metropolitan police, 14*s.* would have been very much under the contribution the man would have obtained for his term of service?—It would have been probably somewhat under.

3026. In that case the pension would have been 1*l.* a week. Now the next case is the case of Stephen Martin, and the amount is somewhat less. That amount was arrived at, I suppose, without any basis of calculation, but it differs from the last case, does it not?—Yes, it is 15*s.* a week; only 1*s.* a week more.

3027. But

3027. But 1 *s.* a week makes a material difference in a pension, does it not?—Not a very large difference.

3028. Then we come to the case of which so much mention has been made, the case of Radford?—In that case a pension of 16 *s.* was granted.

3029. The man had 17 years and a month of service, had he not?—Yes, he had.

3030. A representation by the men was made upon that to the Board, was there not?—There was.

3031. There was a memorial sent in upon the 19th of June 1873, I believe?—Yes.

3032. Was any notice taken of that?—The Board decided not to increase the pension to Radford. The Board thought that the pension was sufficient, having regard to the length of service and to the pay which he was receiving. I think in that case the amount does not compare unfavourably with what it would have been under the scale of the metropolitan police.

3033. As I understand, the position of Radford was that of an engineer?—His position was that of an engineer.

3034. And he is supposed, upon Captain Shaw's evidence before this Committee, to rank with a chief inspector of police?—The Board knows nothing about any relative ranks as between the fire brigade and the police.

3035. Mr. *Ritchie.*] But you compared it yourself, did you not?—All pensions upon any fixed scale are based upon the pay the man is receiving at the time he retires. If I take Radford's pay, and take the police scale of superannuation, I do not find that Radford would have received 1 *s.* a week more than he did receive.

3036. *Chairman.*] Is it not the case that Captain Shaw, and the men themselves, have always represented that a man distinctly in charge of a separate head station was identical in position, and ought to receive the same amount of remuneration, as a chief inspector in the police force?—I have never heard any such representation made by Captain Shaw to the Board, or to the Fire Brigade Committee, and the only allusion to anything of that kind is in this memorial of officers and firemen, dated the 19th June 1873, in which it is stated incidentally that a corresponding position to Radford's in the police force would be that of chief inspector, but there has been nothing before the Board at any time to show what the corresponding position in the police force would be; the Board has never compared the firemen with the police in any way.

3037. And what you would represent to the Committee is, that with the wages which Radford at that time was receiving, 16 *s.* a week practically represents the amount which would have been granted at the same rate of wages in the metropolitan police force?—Yes.

3038. Radford died, I believe, very shortly after the pension was granted?—He died within a year afterwards.

3039. And on his death the Board granted a gratuity, I believe, to his widow?—The Board granted a gratuity to his widow.

3040. And that gratuity amounted to 20 *l.*, did it not?—It did.

3041. This system has, upon several occasions, led to remonstrances from the men with a view to establishing a system of superannuation, has it not?—I do not know that it has led to remonstrances; there was the memorial to which you referred just now, on the 19th June 1873; at that time the Board was not prepared to lay down a scale, and the men were informed to that effect; then, again, at the beginning of 1874, namely, upon the 28th of February, there was a memorial asking that a scale of pensions might be fixed.

3042. Did the letter of the 28th of February state that the men were leaving the ranks rapidly, through their dissatisfaction at this want of superannuation?—Yes; the letter states that a great many resigned upon that account.

3043. Was that letter considered by the Board?—It was.

3044. Was any action taken upon it?—Yes, it was considered upon a great many occasions, and it resulted eventually in the preparation of that scheme of superannuation which has been laid before this Committee.

3045. Nothing having been done after the 28th of February; I think they made a fresh application upon the 17th of November?—I do not find that a fresh application was made to the Board upon that date.

3046. It was not submitted by Captain Shaw to the Board?—I do not think it was.

Mr. *H. De la Hooke.* 18 May 1876.

3047. Was not there upon the 27th of January 1875, a scheme proposed by the Board?—No scheme was proposed by the Board on that day; a scheme was drawn up by an individual member of the Board, expressing his own views upon the subject.

3048. Was that scheme submitted to the men?—It was laid before a sub-committee, which was entrusted with the preparation of the scheme, and Captain Shaw was authorised to lay that before the men; it was not adopted at all by the committee.

3049. I understand that the scheme which was mentioned in the evidence here as having been submitted to the Board, was submitted, not as the decisive opinion of the Board, but as the opinion of one member?—Of one individual member; it was his scheme.

3050. That was the idea of paying the men's pensions out of their own money?—Yes.

3051. That scheme did not gain the approval of the men, I suppose?—No, it did not.

3052. The men again asked, did they not, in the month of June 1875, that this subject should be considered?—If so, I do not think their request was presented to the Board; the men may have made a representation to Captain Shaw upon the subject, but probably Captain Shaw, finding that the matter was being considered by the committee, did not present it to the Board.

3053. You mean that it never came under the consideration of the Board?—No, it did not.

3054. The men stated that they made a recommendation, and if it did not come to the notice of the Board, it should be made clear that Captain Shaw, on receiving that application from the men, did not bring it before the Board?—Captain Shaw no doubt came and inquired how the scheme was going on, and what position it was in, and kept the representation back.

3055. When was that scheme prepared, a copy of which has been submitted to the Committee, which was proposed to the men as a scheme by the Board?—That was agreed to in the month of March of the present year.

3056. That was subsequent to the appointment of this Committee, I believe?—I forget on what day this Committee was appointed.

3057. That scheme was submitted to the men upon the 31st of March 1876?—It was adopted by the Board on that date.

3058. And the men had made a counter proposition upon that to the Board?—The men have not made any counter proposition to the Board. All that the Board had from the men after that scheme was resolved upon was a summary rejection of it.

3059. By the men?—Yes, by the men.

3060. Were any grounds stated for that rejection?—I have their reply here. "We, the undersigned officers and men of the Metropolitan Fire Brigade, having had submitted to us the scheme of superannuation agreed upon by the Metropolitan Board of Works on the 31st ultimo, are decidedly of opinion that its provisions are not such as can be accepted by us. We are therefore compelled most respectfully to decline the conditions contained therein. We also beg leave to express our desire that, through you, the Board should be informed that the scheme submitted by us in our memorial to them in February 1874 is, in our opinion, a very moderate one, and that, in justice to ourselves, we are compelled to adhere to it." That reply is dated 4th April 1876.

3061. In that the men refer to the scheme that had been before the Board in 1874?—Yes; they refer to the scheme which they themselves propounded in their first memorial to the Board, asking for a scheme.

3062. That was upon the 28th February 1874?—Yes. (*The same was handed in.*)

3063. And nothing was done after that until March 1876, when the scale, which we have had produced in evidence before us, was submitted by the Metropolitan Board of Works to the men?—Nothing was finally adopted by the Board.

3064. Mr. *Onslow.*] That is the final recommendation of the men, is it not; they do not wish to alter their memorial of 1874?—The men have made no further application to the Board: but from the evidence which the men have given before this Committee I have gathered some things which were not in the memorial.

3065. *Chairman.*]

3065. *Chairman.*] As I understand the evidence which has been submitted to the Committee upon that point, the men differ more in the periods of years which are fixed by the Board, and upon the point that an age is to be arrived at, that of 60 years, before superannuation can be taken?—That is so; and also with regard to the amount which is to be deducted from their wages. In this memorial of theirs, although they say they would be willing to contribute towards the pension fund, they do not say what amount they would be willing to have deducted from their wages; neither do they say, I think, that they would like to leave when they are in good health at the end of 30 years' service.

3066. We understood from Captain Shaw's evidence, and the men, I think, confirmed it, that 2½ per cent. was the amount which they were prepared to contribute to the superannuation fund; has that been submitted to the Board?—No; that has not been submitted to the Board.

3067. As I gathered from the men's evidence, that formed part of their scheme?—That may be their present desire, but that was not stated by them in their Memorial to the Board.

3068. Then I may gather that the only answer which the men have made to the proposal of March 1876, has been to refer the Board to their scheme submitted in 1874?—That is so.

3069. What action has been taken by the Board subsequently to March 1876?—The Board, after receiving this communication from the men rejecting the scheme agreed to by the Board, decided that as this Select Committee was sitting and inquiring into this subject of superannuation, among others, the further consideration of the subject should be postponed until this Committee should have made their Report.

3070. With regard to the other Reports which are before the Committee, as submitted by Captain Shaw, I should like to take, first, the Reports, if you can separate them, which he has made constantly with regard to the increase of the men; I think the first of those Reports is on page 3 of the Appendix; the Report of the 11th July 1866; that Report states that the number of men taken over was 129; that 55 men have been added since, and that the present strength of the brigade is 184 men, and 40 stations, and Captain Shaw concludes that Report by adding: "It is therefore my duty to recommend that 30 additional men be appointed;" I would ask you whether that recommendation was considered by the Board, and what their action was upon it?—The Board appointed the 30 men asked for by Captain Shaw on receiving that recommendation.

3071. When did the committee deal with the matter?—The committee dealt with it on the same day, and the Board at the next meeting.

3072. And they granted the 30 additional men asked for?—Yes, they granted the 30 additional men asked for.

3073. Upon the same page, on 13th October 1866, Captain Shaw reports to the Board that the total number of his men who had been appointed, including those 30, amounted to 232, and that there had been from deaths and resignations 25 vacancies, leaving the present number at 207; and he recommended in this report that the 25 vacancies should be filled up?—Yes.

3074. Was that considered by the committee?—That was considered by the committee, and the committee at once recommended the Board to appoint those men, which the Board did at its next meeting.

3075. Then we come to page 5, the Report of 2nd November 1867, and in that report Captain Shaw states: "Since the 31st ultimo I have done the whole of the work with our own men, that is to say, the men taken over from the society, and the regularly appointed men of the brigade; but as I have been short of hands every night since, I have been compelled to fill up the stations with the same men whom I had previously to the 31st employed for escape duty. It will be in the recollection of the Committee that up to Midsummer there were in the Fire Escape Society 90 men, of whom the Board took over 67, leaving a deficiency of 23 on the original number. Since that time the Brompton and Peckham stations have been opened and manned, and the Brixton and Westminster stations are now nearly complete, and I should therefore recommend either that the original number of men be made up by appointing 23 now, or that I be authorised to continue the employment of the old fire-escape hands at the rate of 4 *s.* a night each." Then he says, that "the regular hands have been complaining

Mr. *H. De la Hooke.*

18 May 1876.

plaining bitterly of want of rest, and I have already several times been compelled to hire men by day as well as by night to assist the firemen in carrying on the duties." Was anything done on that recommendation to appoint 23 men?—The committee wanted to inquire further into the matter, and it was referred to the Chairman of the Board, and the deputy chairman of the committee to make those inquiries and to report to the committee upon it; but upon the 25th November a further report was made by Captain Shaw, and then the committee recommended the appointment of 15 more men.

3076. A recommendation was made for 23 men by that report, and the result of that was that at the end of the same month 15 men were appointed?—They were actually appointed by the Board in the beginning of December, but the committee made the recommendation in the month of November.

3077. Were those men whom Captain Shaw asked to be employed temporarily employed until the 15 men were granted; that is to say, during the interval between the 2nd November and the decision of the question by the Board?—Captain Shaw reports that he has carried on the duty with the aid of these men; he does not ask to be allowed to do so. He says, "I have done it." There was a resolution of the committee in October that Captain Shaw should continue the employment of the fire-escape conductors for a further period of one month; the continued employment of those supernumerary men was got rid of by the appointment by the Board, in the beginning of December, of 15 men.

3078. But in the meantime there had been another application by Captain Shaw, of the 25th November, to the Board, when he enclosed a memorial from certain members of the Society for the Protection of Life from Fire?—Yes; that was a memorial from the fire-escape conductors.

3079. In that report Captain Shaw says, "We are at present 23 men short of the original force"; and he goes on to give the number of the fixed duties, and then he says, "The consequence is that there are numbers of men who scarcely ever have a night in bed, and who are besides kept at hard work from breakfast to dinner (or from 9 a.m. to 1 p.m.) every day. They are not at all in the habit of complaining, but they are naturally most anxious for a little relief, and I sincerely trust that the committee may be pleased to put me in such a position that I may be enabled to give every man an occasional night off during the winter." The Board had that before them before they came to the decision with regard to the 15 men, had they not?—Yes.

3080. And the Board decided not to grant the 23 men but to grant the 15?—Yes. A little higher up in that report Captain Shaw states that he is 23 men short, and he goes on to say, that "There remain therefore only 16, and I should strongly recommend the committee to avail themselves of their services by granting the prayer of their memorial."

3081. That is with regard to the memorial that is presented; he recommends that the 16 men mentioned in that memorial should be appointed, but he still points out that 23 men are required to bring them up to their actual strength?—That is so.

3082. Then I think the next report which refers to the increase of men is dated the 6th June 1868, is it not?—Upon the 25th May Captain Shaw mentions the number of duties the men have to do, but there is no recommendation to increase the number in that report.

3083. But on the 6th June there is a direct recommendation for an increase of men, is there not?—There is.

3084. And that is in consequence of the necessity of manning certain new stations which are supposed to be in course of erection?—Yes.

3085. In that report I think 32 men are pointed out as being wanted?—Yes, for the new stations.

3086. No, it goes on later to say that for the new stations 28 men will be required. He says: "I append a table showing that, without reference to the new stations, it would require 32 additional men to carry out this most desirable object, and I would most respectfully urge the advisability of dealing with this subject at any early date; and then he says, "I should suppose that the number of men which the committee will wish to put into the new stations now referred to will be altogether about 28"?—Yes.

3087. What was the action taken upon this report?—The committee, seeing that this was a large recommendation, involving a considerably increased expenditure,

expenditure, resolved, before they came to a decision on the matter, to visit some of the stations, and inspect them, and see for themselves what the actual work was.

3088. Did they do so?—Yes; members of the committee went round to the stations in their respective neighbourhoods, and in the month of July a number of new men were appointed.

3089. We have here a recommendation of the 6th June for the appointment of 32 men for a particular purpose; that is, the relief of men from over-work, and suggesting that 28 men is the number that would be necessary properly to man the new stations about to be completed, and what I want to arrive at is, how many of that number of 60 were appointed, and when they were appointed?—Twenty-five were appointed on the 28th July, and 35 were appointed on the 10th October.

3090. In the year 1868?—Yes.

3091. Had there been any further recommendations by Captain Shaw with regard to the increase of men between his report of the 6th June and the time when the men were granted?—Yes, on 2nd July Captain Shaw asked for more men.

3092. But I would call your attention to the report of the 18th June 1868; in that, I think, there is a statement by Captain Shaw, in which he says: "I would, however, most respectfully urge the committee that a continuance of the same course on a large scale" (that is, the employment of these supernumerary men) "might be attended with serious danger, and I would therefore recommend the immediate appointment of a sufficient number of men to meet the present emergency." That is, I suppose, the emergency to which Captain Shaw called attention upon the 6th June: "For this purpose I beg to name 40 as the most convenient number, pending the report of the sub-committee"; that is the committee which you say were investigating the stations?—Yes.

3093. And he goes on to say, "and I have no doubt that after the sub-committee have examined into the present condition of the brigade, with regard to the duties and labours of the men, they will report in favour of providing the remaining number to complete the 60 asked for in my report of the 6th instant." What was done upon that report, because that report implies that Captain Shaw recommends that whilst this committee is considering the final appointment of 60 men, the emergency is so great that the number of 40 men ought to be appointed at once, even before they have come to a conclusion?—The committee did not adopt that recommendation. Captain Shaw was going on doing the duty with supernumeraries, and the committee thought that he had better continue that until they were able to decide what number of men should be appointed, and as I say the whole 60 were appointed, 25 upon the 28th July, and 35 upon the 10th October. It was on the 10th October when the second instalment of 35 men to complete the 60 were appointed, that Captain Shaw made the statement which I read a little while ago, that he was confident that the result of such a step would be the means of removing all reasonable cause of complaint on the part of the men, and would at the same time be attended with most beneficial results to the business of the Board.

3094. I only want to make it clear what was done during the interval, because there are several of these reports which refer to it; and with regard to these supernumeraries, they were not supernumeraries to meet this number he asked for, because they were only supernumeraries to meet the two new stations in the Kent-road and Lewisham, which had been opened, and those which had been reported as nearly ready. To meet this he appointed certain supernumeraries, and he points out that it is very disadvantageous to the brigade to employ supernumeraries at all, on account of certain reasons which he there gives, and urges again his report of the 6th June, stating that while the committee are deliberating on the question of 60 men, he thinks the case of so grave a character that he asks the Fire Brigade Committee to give him an order to increase the force by 40 men permanently. Nothing was done upon that at that time, as I understand?—No: that is to say, no men were appointed at that time.

3095. The letter of the 2nd July stated that nothing had been done then, because I think that contains a recommendation that those very two stations where the supernumerary men were to be employed should not be opened, "as the brigade is not sufficiently strong in numbers to undertake new duties without considerable risk"?—Yes, that was so.

Mr. *H. De la Hooke.*

18 May 1876.

3096. Then, upon the 28th July there is another report from Captain Shaw?—There is.

3097. This is during the time the committee are still considering the question, and the men have not been granted?—That is so.

3098. I will call your attention to the first part of that report in which Captain Shaw says, "I have to report that the present condition of the fire brigade, with regard to numbers, is so critical that I feel I should be wanting in my duty to the committee if I did not bring the matter again under their notice, for the purpose of most respectfully asking that they may be pleased to give me instructions as to the course to be pursued;" what action did the Board take upon that?—Immediately upon receipt of that report the committee recommended the Board to appoint 25 new men, which was at once done; on the same day.

3099. That was done upon this report, in which Captain Shaw further asks, he may be allowed to discontinue certain duties which he is at present carrying out, if he is not allowed to increase the force?—Yes.

3100. That was subsequent to his having asked for the temporary appointment of 40 men?—Yes.

3101. You say the Board then appointed 25?—Yes; upon the 28th July.

3102. Sir *James Hogg.*] And eight more men in place of men resigned?—Yes; eight more men in place of the men resigned; but it was an actual addition of 25 men.

3103. *Chairman.*] Then upon the 23rd September the Board passed another resolution, did they not?—Yes, upon the 23rd September; at which date Captain Shaw said he had engaged, in addition to the men who had been appointed by the Board, the temporary services of 11 men, who were then all at work, and that he had got the names of 24 other men as supernumeraries; the committee then authorised him to continue the employment of those 35 men into the next month, when those men were permanently taken upon the staff.

3104. Until the 10th October, the number of men who had been permanently added to the brigade was 25?—Twenty-five was the number permanently added, and then 35, making 60.

3105. Sir *James Hogg.*] They were supernumeraries until they were appointed, were they not?—Yes.

3106. *Chairman*] Those 25 men were appointed on receipt of the report of July?—Yes.

3107. The Board when they appointed 25, instead of the 40 that Captain Shaw asked for, had before them these words: "I see considerable danger likely to arise from leaving such a question unsettled for the next two months"?—Yes.

3108. And the question was partially dealt with by the appointment of 25 men; but what Captain Shaw had pointed out as a critical state of things was left undecided until October?—I think it was felt that the 25 men would give the immediate relief that Captain Shaw wanted.

3109. Notwithstanding his report of the 18th June, in which he states that he recommends the immediate appointment of a sufficient number of men to meet the present emergency, and that number was 40?—Yes; Captain Shaw named 40 as the most convenient number.

3110. Then we come to the report of the 10th October, which is the next one. In that report Captain Shaw states, "A perusal of these papers will show that the amount of duty is in itself exceedingly heavy; and the experience of the Committee will eable the members to realise the fact that the hours of labour are longer than those of mechanics, soldiers, policemen, sailors, or any other class of men. In addition to this it will be remembered that these hours are irregular, the men doing sometimes eight or 10 duties of one or two hours at a time, the whole being spread over a period of some 24 hours," and so he goes on with the old statement with reference to the want of rest and overwork, and then he says: "A precise calculation on the basis of these returns would lead to the conclusion that it would be advisable to relieve the men by making an addition of one man to every station all round; but, as there are now 50 stations open, this would involve an increase of 50 men; and I am of opinion that, by making a few changes in some of the outside districts, it will be quite possible

possible to carry on the duties with an addition of 35." The action of the Board, as I understand then, was to appoint those 35 men on that report?—Yes.

3111. I understand you to have stated that those 60 men were appointed in two divisions, one of 25 and one of 35, and that Captain Shaw in his last report stated that if those 60 men were so appointed he believed he could meet the requirements?—Yes.

3112. Mr. *Ritchie* (through the *Chairman*).] Could you state to the Committee how many men the force was composed of after the 60 were added to it at this time?—The strength was 374.

3113. *Chairman.*] And were the stations still 40, or were they increased?—The stations were 48 or 49 at that time.

3114. They had been increased to 48 or 49?—Yes.

3115. That is to say, the station which was said to be ready to be opened, had been opened?—Yes.

3116. And what number of escapes were there at that time; had the full number of 106 been reached then?—No, there were 90 escape stations at that time.

3117. Then the next report to which I need refer you is on page 16, dated the 11th February 1869; a recommendation is there made for the addition of nine men, is it not?—No, not for an addition of nine men. Captain Shaw calls attention to the fact that the Sydenham station, adjoining the Crystal Palace, will be ready for occupation before the next meeting, and he presents to the committee two alternatives, either to appoint three men or six men.

3118. He states in that report that he has no men disposable in London for meeting this duty?—Yes, he says he has not.

3119. And recommends that a number of either three or six, whichever the committee decide upon, should be appointed at once?—Yes.

3120. Was any action taken upon that?—It appeared to the committee, upon further inquiry from Captain Shaw, that arrangements might be made for taking over that duty without appointing any new men, and he was instructed to carry that out.

3121. And those three men were not appointed?—No, they were not.

3122. We have there an additional station opened with the same staff, have we not?—Yes.

3123. That would make the number of stations 49, I presume?—Yes.

3124. I think the next report on this point is that of the 18th December 1871, with regard to a new station at Blackheath; that also was for an addition of three men?—Yes, it was.

3125. Were men added upon that report?—The course taken to supply the men for the Blackheath station was this: The Waterloo-road station, which the Board had determined to discontinue in 1869, but which had not been yet closed, was closed at that time, and two men were transferred from the Waterloo-road to Blackheath.

3126. Instead of the three men who were asked for the station?—Yes; only two men were placed there at that time.

3127. And therefore no men were added upon that report, and the stations were not increased, because one was shut up and this new one opened?—Yes.

3128. Then next we come to the scheme, I think, of the 14th of October 1872. Was that scheme considered by the Board?—That scheme was laid before the Fire Brigade Committee, but that suggestion fell dead at once.

3129. It was looked upon by the Board merely as a suggestion which their funds did not enable them in any way to contemplate?—That is so.

3130. I suppose Captain Shaw gave his reasons before the Board at their meeting for recommending this scheme?—All his reasons are stated in the report.

3131. I see that this implies that the Board had been considering this subject before this report was made, because it begins by saying that, "With reference to the subject referred to me, I have to report." Now, was that subject an increase of the number of men in consequence of the increase of stations, or of the representations with reference to overwork?—I think just before that time the Board was in a position to place a few more fire-escapes in the metropolis. I think the question arose generally as to what would be eventually necessary

Mr. *H. De la Hooke.*

18 May 1876.

for the proper protection of the metropolis which the Board might look forward to, and Captain Shaw was then instructed to bring up a report containing his ideas, and he brought up that report.

3132. There it was with regard to two previous reports, one of the 13th of May 1872, and one of the 14th of February 1870?—No; I would not say that it was with regard to the two reports which are contained here, because this Appendix does not contain all Captain Shaw's reports, but it was with regard to the suggestion for some slight increase which it was thought the Board's funds would enable them to make at that time.

3133. I see the report of the 13th of May 1872, which precedes this report of the 14th October, selects out of a list previously submitted to the Board certain fire-escape stations which were urgently needed?—I do not say that it was with regard to that one, because those six fire-escape stations which he mentions there were established by the Board, and the number of men, namely, nine, which he suggests, were appointed when the new escape stations were established.

3134. Were those men appointed at the time of the establishment of the six fire-escapes?—Yes; the men were appointed at the time of the establishment of the six fire-escapes. I think, perhaps, on consideration, that it was in reference to that report that this second one of the 14th of October arose.

3135. On the report of the 13th of May 1872, in connection with the previous report of the 14th of February 1870, with regard to the necessity of a very large number of fire-escape stations being established?—Yes; those six fire-escape stations which are recommended in Captain Shaw's report of the 13th of May 1872 are six of those stated in his report of the 14th February 1870, which were the most urgently needed.

3136. In that report of the 14th February 1870 there was a recommendation for 26 new stations, with 39 men?—Yes.

3137. Was anything done upon that at the time?—This was not a recommendation made by Captain Shaw of his own motion as to places where he thought fire-escapes were at once required, but a report was made by him upon the committee asking him what places, in the event of their being able to provide a few new escapes, he thought would want them most.

3138. And that list of 26 places contained the places he pointed out in answer to that inquiry?—That is so.

3139. Nothing was done, as I understand, in answer to that, until the 13th May 1872, when the Board felt in a position to establish some new stations?—Yes; there was something done; eight escape stations of this list of 1870 were established before the Report of 1872 was brought up; but as I have said, these reports of Captain Shaw's are not all the reports which he has made; they are only what he has handed in to the Committee. Between February 1870 and May 1872 nine stations out of the 26 stations which Captain Shaw recommended in 1870 were established.

3140. May I take it that by 1872, 15 out of the 26 had been established?—Yes, they had, and a few others have been established since that.

3141. Had the additional number of men been given with the escapes?—Yes; a number of men were appointed with each batch of escape stations which were established.

3142. Have you the number of men that would have been added to the force of the brigade, that is, to the 374 men that we had in October 1868, by the establishment of the 15 escape stations?—Seventeen additional men were appointed.

3143. There was an increase of 15 stations and 17 men; that made the number of escapes 105, did it not?—Yes.

3144. Will you put in the reports which are not among those that are printed in the Appendix referring to the question of the establishment of these fire-escape stations, pointing out when these nine escapes were added, and what number of men were appointed to each of them?—I will.

3145. I understood you to say that those six stations referred to in the report of the 13th May 1872 were all established, and that the number of men appointed for them was nine?—There were nine men for those six stations.

3146. What the Committee would like to have would be the number which you have referred to out of that list which had been established between the date of February 1870 and May 1872, showing how many out of the original list of 26 stations

26 stations have been established, and the number of men that have been added to the brigade by the creation of those stations?—I can read the reports at once if the Committee would like.

3147. With regard to the Fulham-road Station, near to St. Mark's College, has that been established since?—That has not been established since.

3148. The Kensington-road Station, near Prince Albert-road?—No, not that.

3149. Kensington-road, near Russell-road?—No.

3150. The Uxbridge-road, near the Crescent?—No.

3151. Sussex-road, Kensington-park, that is one that was established in May, is it not?—Yes.

3152. Hampstead, at the fire-engine station?—That has been placed there.

3153. And Highgate, at the fire-engine station?—Yes.

3154. Farringdon-road, near the House of Correction?—That has not been established.

3155. Camden-road, near the Brecknock-road?—That has been added.

3156. The Old Ford-road is one of those added in May; then the Cambridge Heath-road, near the canal?—That has not been added.

3157. The New Cross Station, near the South Eastern Railway, was added in May, was it not?—Yes.

3158. Charlton, near the station?—That has not been added.

3159. Woolwich, at the fire-engine station?—That has been added.

3160. Plumstead, near the Arsenal?—That has not been added.

3161. Blackheath, near the railway?—That has not been added.

3162. Lee, near Lee Green?—That has not been added.

3163. Eltham, near the church?—That has not been added.

3164. Lewisham, near the church?—That has been added.

3165. Sydenham, in the High-street, is one of those added in May?—Yes.

3166. Brixton, at the fire-engine station?—That has been added.

3167. Streatham, near the church?—That has not been added.

3168. Tooting, at the fire-engine station?—That has been added.

3169. Putney, in the High-street?—That has been added.

3170. Wandsworth, at the fire-engine station?—That has been added.

3171. And Battersea, near Battersea new church?—An order has been given for it, but it has not yet been placed there.

3172. Have you a record of the number of men who were appointed in those cases?—Yes, I have.

3173. In the Sussex-road, Kensington-park, how many are there?—I do not begin with that. In July 1871 Hampstead and Highgate were established, and two men were appointed. On the 10th of November six other escapes were placed, and six men appointed, and in August 1872 upon this report of Captain Shaw of May 1872, the six escape stations were placed, and nine men were added; that deals with them all.

3174. Was the attention of the Board called to the number of men which Captain Shaw considered requisite under this establishment of fire-escapes?—Yes.

3175. What number does he recommend to the Board when a new escape is established?—He generally recommends three men for two escapes.

3176. That could hardly have been carried out?—No, it was not quite carried out. In the last six it was, but not in the previous batch.

3177. The last recommendation for increase is upon the 20th of December 1873; was that recommendation carried out?—Yes, it was carried out. A small fire-brigade station in the north-eastern part of London, in a district which was considered sufficiently protected by other stations, was closed, and the men were transferred to Battersea.

3178. How many men were transferred to Battersea?—Three men, because the fire-escape was not then placed there.

3179. That did not increase the number of your fire-escape stations, did it?—No, it did not.

3180. Nor did it increase the number of men; it was only a transfer?—That is all.

3181. Are those all the reports from Captain Shaw which have been laid before

Mr. *H. De la Hooke.*

18 May 1876.

before the Board with the view of increasing the strength of his brigade?—I do not know that those reports are quite all, but I have a list here showing the dates upon which all the men added to the brigade have been added, and they were all added upon Captain Shaw's recommendation. I think you will find that all the reports in which Captain Shaw has recommended additions either to men or plant, or appliances of any kind, and which have not been adopted either wholly or in part by the Board, are in this printed paper.

3182. Do I gather from you that the recommendations which do not appear in this printed paper from Captain Shaw to the Board have all been adopted?—Yes, I think so.

3183. Would it be difficult to put in those reports, so as to complete the number of Captain Shaw's reports with regard to an increased number of men?—No; I could have those reports copied out and put in.

3184. It would make the reports complete in reference to the way in which the Board had dealt with the increase of their staff which had been recommended?—Quite so.

3185. Then, with regard to Captain Shaw's recommendations upon the subject of the head-quarter station, I think there are three of those reports in which that appears; the first one, I think, is the 23rd of October 1868?—Yes; that is the first one.

3186. In that report Captain Shaw states: "I should most strongly recommend that, for the proper protection of London, the head-quarter station should be on the waterside, and that it should be provided with a floating pier, alongside which the principal fire float should lie, so as to be ready at all times to move away within two or three minutes of receiving a call, instead of having to wait, as at present, at certain times of tide, nearly half an hour getting the men on board. The advantage of such an arrangement would be of the utmost moment in all cases of heavy waterside fires, and would, undoubtedly, reduce warehouse and wharf losses very considerably. It would, of course, be a matter for the consideration of the committee to decide where such a site could be found; but as it is necessary, in a report of this kind, that I should make some general recommendation as to position, I should name any part of the riverside between the Temple and Southwark Bridge on the north shore, or between Waterloo Bridge and Southwark Bridge on the south shore, care being taken that in the spot selected there should be not less than four feet of water alongside the pier at low water of spring tides. I believe, from such information as I can obtain, that the value of the houses in Watling-street is so great that comparatively little expense would be incurred in carrying out this most important object; and I should recommend that the question be considered as soon as possible, partly because we must shortly give up the present workshops and drill ground in order to make way for the new street, but chiefly because the scheme of our organisation can never be considered by the Board to be complete as long as we are without a suitable head-quarter station." What was the action taken by the Board upon that report?—The Board took no definite action on that report. I may say, that the statement in the concluding paragraph of that report, that "the value of the houses in Watling-street is so great that comparatively little expense would be incurred in carrying out this most important object," was found on inquiry to be far from being the real case.

3187. But the Board had under consideration the other parts of that recommendation too, which referred to the advantage in the way of the improvement of the system of working the brigade which a central station would give, and also the necessity of its being on the waterside, so that the floats might be in connection with it, and might be near a pier from which they might be easily reached?—The consideration of the matter was adjourned. This was in 1868, at which time that limit of 40,000 *l.* for expenditure upon fire brigade stations, 7,000 *l.* of which had been spent in redeeming mortgages on the old buildings, was in force, and the Board was pressed upon all sides by the parishes and districts of the metropolis to provide fire stations for them, which the Board was doing as rapidly as possible, and that 40,000 *l.* was all pledged for the purpose.

3188. And having their hands tied the Board were unable to meet the suggestion, even though it appeared a sound one; is that so?—Well, it was not made to appear to the Board a pressing necessity.

3189. The next reference to the subject of a head-quarter station, which was submitted

Mr. *H. De la Hooke.*

18 May 1876.

submitted to the Board, is contained in the report of the 15th April 1872, is it not?—Yes, that was the next one. That is at page 21 of the Appendix.

3190. Had that report been suggested to Captain Shaw by any communication with regard to the establishment of a central station, because I see he says, "with reference to the subject"?—No, I think that arose in an incidental manner, with regard to the workshops of the fire brigade. Captain Shaw had always been of opinion that the workshops should be attached to his central station, and it was upon that question that the subject of a new central station was brought before the committee. When the report was made it was thoroughly considered, and the late Chairman of the Fire Brigade Committee, Mr. Phillips, took a great interest in the matter, and was very anxious to see what could be done. A sub-committee was appointed and met ten or a dozen times, and in the situation which Captain Shaw suggested for the chief station, namely, the water side, between two of the bridges named in his report, the sub-committee found that there were only two sites which could be suggested by them. They were on the Thames Embankment, one of them the Grand Junction Wharf, I think, next to Blackfriars Bridge, and the other near Waterloo Bridge, and it was found on consulting the Board's architect that each of those sites was worth about 50,000 *l.*, and could be sold for that amount. The committee had designs prepared to see what would satisfy Captain Shaw's requirements, and it was found that the buildings would cost 30,000 *l.*, so that the cost of a new head-quarters' station could not be put at less than 80,000 *l.*, while the Watling-street premises were valued at about 10,000 *l.*; therefore, the committee thought it was totally out of the question, seeing that there was no pressing necessity made manifest to them for a new head-quarters' station.

3191. I suppose the Committee are to understand that the Metropolitan Board of Works did go thoroughly into the question, even in 1868, with regard to that report which was made to them, but decided that their funds did not admit of entertaining it, and that no necessity for it had been shown to that extent?—Quite so.

3192. Mr. *Onslow.*] I wish to understand whether the Metropolitan Board of Works seriously went into the question upon the first report of Captain Shaw, of the 23rd October 1868?—It was seriously considered.

3193. Sir *Henry Peek.*] The whole of the money was pledged, as I understand?—Yes, it was.

3194. So that the Board could not go into the matter?—Exactly.

3195. *Chairman.*] I think you have stated that the Metropolitan Board of Works had Captain Shaw's first report of 1868 before them, that they did consider it, and that they found practically that they had their hands so tied financially that it was impossible for them to entertain the proposition?—That was so.

3196. At the same time believing the necessity was not so great as to render it necessary for any outside power to be acquired for the purpose?—Quite so.

3197. The next application was a repetition of the same report made in 1872?—Yes.

3198. Which was thoroughly investigated by the Board?—Yes, it was thoroughly investigated by the Board.

3199. Were the Board in a position then financially to deal with the matter?—That is a question I should prefer to be answered by the Board's accountant. I do not know exactly what the Board's financial position was then, but I know this, that the cost of the ground was estimated at 50,000 *l.*, and 30,000 *l.* for the erection of the building.

3200. What you put before the Committee is, that this report was thoroughly considered on more than one occasion by the committee appointed for the purpose?—The report was thoroughly considered on 10 or 12 occasions.

3201. Has anything been done subsequently to that with regard to the consideration of this head-quarter question?—It is still under consideration, and the Board's architect has been engaged in endeavouring to find some ground which could be obtained for a less price, and which would also satisfy the requirements of the fire brigade.

3202. There is another report, which Captain Shaw gave on page 25, dated 26th July 1875, in which he again brings up the subject?—That is before the committee, and is now undergoing consideration.

Mr. *H. De la Hooke.*

18 May 1876.

3203. Was that considered in 1875 specially?—Yes, it was considered then.

3204. Was it upon that consideration that the architect was instructed to look out for a site?—Yes, it was.

3205. Have you a record of what the Board did on that occasion?—Yes, it came before the committee on two or three occasions, and was adjourned from time to time in consequence of the press of other business, but I have the instruction to the architect to endeavour to find a suitable place. He has had two or three instructions from time to time; he has been asked by the committee whether he has been able to find a place, and some members of the Board have been looking out too.

3206. Has anything recently been done with regard to that?—A site has now been suggested which is under consideration by the committee. I do not know what will come of it, but Captain Shaw has been consulted, and he thinks the site would be very suitable.

3207. I suppose the committee acknowledge the advantage of a better central station than they have at present?—I think I may say that the committee consider that the situation might be improved, but they have not considered the necessity so pressing as Captain Shaw makes it out in his reports.

3208. Has there been any considerable difficulty with regard to the workshops?—There was a good deal of difficulty with regard to getting a site for the workshops, but that has been settled now.

3209. Captain Shaw's recommendation is, that all these things should be combined together in a suitable head-quarters, with a drill-ground and a place for education; that was his recommendation, was it not?—Yes.

3210. In Captain Shaw's recommendation to the Metropolitan Board of Works, he states two positions between which on each side he thinks the central station should be established; has any opinion been expressed with reference to the advantages of the north or south side of the river?—No, I do not think it has.

3211. I mean with regard to the working of his brigade; we understand that the real crowded part of the town is centred practically much more in A, B, and C Districts than in D; has Captain Shaw represented it as being more advantageous that his central station should be on the crowded side of the river, rather than upon the other?—No, I do not think he has. In this report he says he should name any part of the river between two points which he mentions on the north shore, or between two points which he mentions on the south shore.

3212. Has the question of the selection of the site ever been under the consideration of the Board itself, with regard to the several advantages of the two sides of the river?—The site which, as I stated just now, has been found, and which the committee is considering, is upon the south side of the river, and that, Captain Shaw says, would be quite a suitable site for him.

3213. I suppose the central station is, as it were, a reserved station to supplement and assist all the other stations of the brigade?—I suppose so.

3214. Being a central station, especially if established on the recommendation which Captain Shaw submits, it would be a reserve station for the appliances?—Yes.

3215. Have the Board considered whether a station of that sort should not be more directly in communication with the thickest and most crowded parts of the town?—No, I think not.

3216. Because we may suppose that the larger part of the more valuable property of the town is centred round the north side of the river?—I think those are questions which would be better answered probably by some one else than by me.

3217. But having been in the room when these discussions took place, do not you think that that has formed any part of the discussion?—No; I do not remember that Captain Shaw has ever made a point of that at all.

3218. Are those the only reports with regard to the head-quarter station which have been submitted by Captain Shaw?—Yes; I think they are all here.

3219. Mr. *Hardcastle.*] May I ask if the land in Watling-street is of such very small value, what is the objection to increasing the station by purchasing the

the adjoining land?—The Watling-street Station consists of only three leasehold houses which the Board has; that was the architect's valuation of them.

Mr. *H. De la Hooke.*

18 May 1876.

3220. Mr. *Clifton.*] Is that exclusive of the workshops?—The workshops are in the Waterloo-road.

3221. *Chairman.*] Is that the place where they are now?—It is.

3222. Mr. *Clifton.*] Could you give the Committee the value of the workshops?—No, I could not; the architect would be able to give that.

3223. *Chairman.*] Turning to these reports of Captain Shaw's, there are several which we have omitted in the previous part of your examination, and it would be well, perhaps, that it should be shown what the action of the Board had been with regard to all of them; we will take those which we have not got upon the minutes; the first one of all is that the men at present in the training school in Thames-street be appointed; this was in 1866; that was adopted, was it not?—Yes, it was.

3224. Then the next of those reports is in June 1866, with regard to the parish fire-engine stations, and instructions regarding them; what action was taken by the Board upon that?—The Board determined to take over from the parishes, and to maintain itself the stations at Hackney, South Hackney, Stoke Newington, De Beauvoir Town, and Peckham.

3225. Did the Board act upon the suggestions in the report of the 27th of June 1866, with regard to the parish engines?—Yes; they did; the Board ordered 10 new engines to be obtained, which was what Captain Shaw recommended.

3226. That is, that 10 more engines should be added to make up the necessary number?—Yes.

3227. That was in a report in which he pointed out how insufficient the protection was for the suppression of fire?—Yes.

3228. Did the Board act upon that at once?—Yes, that was acted upon at once; in the same month.

3229. Those were manual engines, were they not?—Yes, those were manual engines.

3230. What is the difference in cost between a manual engine and a steam engine?—The steam fire-engines costs about 400 *l.* each, and manual engines cost rather less than 100 *l.*; but they were manual engines which Captain Shaw recommended.

3231. I see that he recommends that a number should be brought forward from the reserve, and ten additional small engines added?—Yes, the Board had purchased a large number of steam-engines in the first six months after the brigade was taken over which are not mentioned in these reports.

3232. The next report is of the 6th December 1866; what was the action of the Board upon that?—That report was adopted at once exactly as recommended. The parish engineers there referred to were all appointed to the rank of engineers in the fire brigade.

3233. The report I next mentioned is sent in on the 12th January 1867 from the third-class firemen, accompanied by a recommendation of Captain Shaw of the 14th January 1867?—The suggestion in that report was adopted precisely as recommended by Captain Shaw. The pay of the third-class firemen of that day was 3 *s.* a day. Captain Shaw recommended that so many men should be promoted to the second class as would fill that class, and that after that, as soon as the third-class men had served a year, and could not go up to the second class, because the numbers in that class were full, they should have an increase to their pay of 6 *d.* a day, which was granted by the Board.

3234. The next report contains the petition of the fire-escape conductors; that we have dealt with?—Yes.

3235. Then there comes the report of the 22nd April 1868, recommending a fire-escape to be placed at Deptford?—Yes.

3236. And one at the Broadway?—Yes.

3237. That was the suggestion of the vestry to Captain Shaw, was it not?—Yes; the site was the suggestion of the vestry, I think.

3238. Captain Shaw in the same report states that with his present staff that could not be done?—That was adopted by the Board a short time afterwards, and one additional man was given him, not two.

3239. Then

Mr. *H. De la Hooke.*

18 May 1876.

3239. Then in May 1868, Captain Shaw calls attention to the amount of duty which the men have to perform?—Yes, there is no recommendation in that report.

3240. But it points out that the men have an amount of duty which he states he is convinced no other force in the metropolis can show?—Yes.

3241. Was that taken under consideration by the Board?—Yes, but this report, together with the others which immediately follow it, were all met by the appointment of those 60 men to whom I referred a short time ago, upon which Captain Shaw stated that that would remove all reasonable cause of complaint; this was one of a series of reports from that date until October 1868.

3242. But all these reports are connected together as recommending that addition of 60 men?—Yes.

3243. Then we come to the 5th November 1868, which contains the recommendation of Captain Shaw which has been alluded to before with regard to the badge for merit?—That I explained.

3244. I understand that Captain Shaw recommended a badge and not a money reward; did the Board take the necessary steps which you referred to to get one designed?—Yes.

3245. Then, in November 1868, the condition of certain stations is pointed out to the Board, and it is recommended that those stations should be removed as soon as possible; was that carried out?—It was carried out, but not as recommended. The Board decided to close the two stations in Sloane-square and Horseferry-road, as they did not appear to be necessary. The Board having placed a large new station in Victoria-street, Westminster, the Horseferry-road Station, which was a small and inconvenient one, was considered not to be any longer necessary; and also, as I have said, the one in Sloane-square, which was an old parish station, was done away with.

3246. The other stations in Brompton and Victoria-street still remain, do they not?—Yes, they do.

3247. Did the Board make any alteration in them so as to make them more suitable for the purposes?—Captain Shaw did not want any alteration in them. He says that, "Owing to the positions of the several stations at Sloane-square, Brompton, Victoria-street, and Horseferry-road, and as those at Sloane-square and Horseferry-road respectively are quite unsuitable," the two latter ones should be removed, and the Board decided to remove them altogether. Captain Shaw did not want any alteration in the situation of the stations at Brompton and Victoria-street, and therefore they were retained.

3248. In December 1868, Captain Shaw recommends 46 small engines to be drawn, and worked by hand with hose and other gear complete; was that suggestion adopted?—That recommendation the Board did not adopt.

3249. Was that not adopted upon the ground of additional expense, or because the Board did not think it advisable?—Of course the question of expense governed the Board, to a great extent; but beyond that it did not, upon inquiry, appear to the committee that the things were really necessary.

3250. They were recommended in these terms by Captain Shaw: "These articles form an essential part of the machinery and apparatus of an effective organisation for extinguishing fire"?—Yes, that is what he said.

3251. And notwithstanding that report, the Board did not think it advisable to provide them?—That is so, mainly on the ground of expense.

3252. Those would have been small engines attached to the different stations, in addition to their present steam and manual engines?—I think so.

3253. And the report states that, at 50 stations which Captain Shaw names, there are only four which are provided with this sort of engine; when did the Board establish those engines at those four stations?—I am not sure that the Board did establish those four; that is to say, the Board have never decided how many engines, or what particular kind of engine, should be placed at any station; that has always been left to Captain Shaw.

3254. And Captain Shaw, having four of those engines at the four stations, recommended to the Board that they were useful for the purpose of extinguishing fire, and that each of the other 46 stations, which made up the 50, should be supplied with the same apparatus?—That was so.

3255. And the Board did not see their way to do it?—No; in this case Captain Shaw wanted a small additional engine, what is called a curricle, to be drawn by hand by the men for small fires immediately adjacent to the station.

3256. Did

Mr. *H. De la Hooke.*

18 May 1876.

3256. Did Captain Shaw state any other reasons than those shown in the reports for the adoption of this addition?—He stated no other reasons that I am aware of.

3257. He did not point out to the Board at the time of their considering the matter that the adoption of those hand engines would often render a station efficient when the steam fire-engine had gone out, and when a few hands were left, but not sufficient to work a manual engine?—He did not, I think, state that.

3258. Then the next recommendation I see that Captain Shaw makes to the Board is a recommendation for the establishment of stand-pipes?—Yes, he recommended that the water companies' turncocks should be supplied with stand-pipes.

3259. In a subsequent report of the 28th January 1869 he shows how many would be required; how were those two reports dealt with by the Board?—The Board did not adopt that recommendation. The Board was very much pressed with regard to funds, and the articles did not appear to be really requisite; certainly not in comparison with many other calls which were being made upon the Board for protection from fire in different districts.

3260. I see the recommendation made by Captain Shaw is grounded upon the fact that this would convert the present plugs into effective hydrants under complete command, "and could be used according to circumstances, either to pour water on the fire direct, or to deliver it into a portable cistern opposite the endangered premises, from which it would be pumped up by the engines. Such an arrangement, compared with that hitherto and still in use, offers many advantages, the principal of which would be a saving of waste of water, a saving of time in getting to work, a saving of hose," and so on; that recommendation you say was not adopted?—No; not that the turncocks should be supplied with stand-pipes. Of course, the Fire Brigade have a certain number of stand-pipes which they carry with their engines.

3261. Captain Shaw's suggestion was that the turncocks should be supplied with stand-pipes in order that they might bring water more readily to bear upon a fire?—That is so.

3262. The next is a report of Captain Shaw's, setting out the duties of the men, which I suppose had been asked for by the Board?—Yes, that is so.

3263. On 6th January 1872, the chief officer was asked to report with regard to protection from fire in Plumstead and the neighbourhood, and he makes a report stating where he thinks the stations should be established. He states also that practical firemen should be in charge of the hose-reels at Plumstead, Eltham, and Penge?—That report arose in this way: An application was made to the Board by the local authorities of Plumstead for a station to be placed in their district; the committee before deciding upon the application of Plumstead, wished Captain Shaw to survey the whole of the metropolis, and tell them where, in the event of the Board being able to add any new stations, those stations ought to be placed, and he brought up this list of places; he did not suggest that those places were in want of stations at once, but he said that in the event of the Board being able to add any new stations those were the places he would recommend. The Board, however, has not been able to establish these new stations.

3264. This report has not been acted upon?—One of the places there mentioned, the Isle of Dogs, is about to have a station.

3265. Then I think the next which we have not referred to is on page 24, dated the 11th July 1874, which deals with the question of the saving of coal?—I think I have explained about that.

3266. In that report Captain Shaw does to a certain extent endorse the opinions formerly given by the insurance offices with reference to the advantage of smaller steamers, which could be brought more rapidly into action, for the purpose of extinguishing fires?—That is so.

3267. There is a recommendation of the 20th December 1875, for eight new hose-vans for the use of the brigade; was that adopted?—The Board decided to have four as a beginning, and four have been supplied.

3268. Then we come to Captain Shaw's report of 7th February 1876, in which he describes the accommodation which would be required for the fire-escapes and instruction classes. Has anything been done upon that?—Yes, that is connected with

Mr. *H. De la Hooke.*

18 May 1875.

with the question of the head-quarter station. The Fire Brigade is at present temporarily occupying premises belonging to the Board, at the Grand Junction Wharf, Blackfriars Bridge; negotiations are in progress for the sale of those premises, and Captain Shaw expects to be turned out, and therefore he wishes accommodation to be provided when the men have to leave. That is being provided for now, and is in the hands of the architect.

3269. That refers to the establishment of a head-quarter station, in which Captain Shaw proposes to concentrate all these workshops?—Yes.

3270. Mr. *Clifton.*] What is that used for?—Grand Junction Wharf is used for placing spare fire-escapes upon which are not sent out on duty at night, and also for training men in the use of the escapes.

3271. *Chairman.*] Are there any other reports which Captain Shaw has made to the Board recommending additional fire-escapes or additional stations, or additional *matériel,* which he has not placed in the hands of this Committee?—No; I think all the recommendations for additions to the force are in this Appendix.

Monday, 22*nd May* 1876.

MEMBERS PRESENT:

Mr. Clifton.	Mr. Locke.
Mr. Forsyth.	Mr. M'Lagan.
Mr. Hankey.	Mr. Onslow.
Mr. John Stewart Hardy.	Sir Henry Peek.
Mr. Hayter.	Mr. Ritchie.
Mr. Herbert.	Marquis of Tavistock.
Sir James Hogg.	Mr. Young.

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

Mr. *Harry De la Hooke*, called in; and further Examined.

Mr. *H. De la Hooke.* 22 May 1876.

3272. *Chairman.*] I BELIEVE you wish to make some corrections in your evidence?—Yes, I do; the first of them occurs at No. 2898. I think from the way in which the question is put and my answer to it, it makes me admit something which from previous answers I had not quite admitted. The question runs: "The result has been what you say, that until they see their way" (that is the Board) "to afford a pressure, which will unable them by hydrants to supersede the use of engines, they are, as at present advised, not prepared to adopt the constant supply and the use of hydrants for the purpose of the fire brigade;" and the answer to that is: "That is so." I did not mean to say that until such a pressure was afforded the Board was not prepared to adopt the constant supply system, because in a previous answer to Question 2885 I said: "The Board have not decided not to avail themselves of a constant supply, but they have decided not to undertake the putting down of hydrants throughout the metropolis."

3273. If that had been your answer there, I should have had to continue the examination on that point, because as I understand the evidence the Board come to the decision not to apply hydrants to the town until a constant supply with adequate pressure is given, because they state in letters which they send to the water companies, that unless they do get that pressure they would not be able to supersede engines by hydrants, and that the expense of putting down hydrants will not be justified unless they can supersede engines by them?—That is not quite so, I think, because in the answer that I gave to Question 2896 I say: "But I should say further that it has never been shown to the Board by Captain Shaw that any advantage would be obtained from the use of hydrants, such as to justify the Board in incurring the expenditure, quite apart from the question of whether the hydrants would supersede the engines or not." Apart from the question whether hydrants could be treated as a substitute for engines, the Board has not had shown to it a sufficient advantage under the present system of water supply to justify it in incurring the expenditure.

3274. You wish the Committee to understand that the Board desire through you to express that they have not considered this question solely as making a comparison between the use of engines and the use of hydrants, but that they have not had placed before them sufficient evidence by Captain Shaw to justify them, as they think, in using hydrants on the constant supply system, as at present afforded?—That is so. Hydrants have not been regarded solely as a substitute for engines.

3275. Has that been the recommendation of Captain Shaw to the Board as regards

Mr. *H. De la Hooke.*

22 May 1876.

regards the application of hydrants to the constant supply?—I should say that the Board's engineer has reported fully on that point.

3276. I ask you that question, because, as I understand, Captain Shaw states distinctly, both in the evidence given before this Committee and other Committees, that the use of hydrants would be of the greatest advantage where a constant supply is given?—I endeavoured to explain the other day that the Board's decision was not grounded solely upon advice given by Captain Shaw, but upon a report made by the Board's engineer, who has thoroughly examined the state of the supply in London, and the conditions under which the supply is afforded.

3277. I would ask, with regard to the report of the Board's engineer upon the question of these hydrants, whether that was founded upon the question of the expense of putting down these hydrants, and the amount of use that could be got out of them, or was it upon the question of whether you could increase the efficiency of the present appliances, even though you might not supersede the use of engines?—The best way of replying to that question will be to hand in a copy of the report of the Board's engineer, in which he states his advice to the Board.

3278. Will you hand in that report?—(*The same was handed in.*)

3279. I wish to get this clear, because I ceased examining you upon that point as soon as you gave me that answer which you have now corrected, which led me to infer that the Board had considered this question of expense, which I should not otherwise have done. Do I understand that that report of the engineer was adopted by Captain Shaw?—I cannot say that the whole of this report was adopted by Captain Shaw, because this report states the results of investigations made by the Board's engineer himself into the pressure and other conditions on which the supply was given in London; but the conclusion at which the Board's engineer arrived was certainly adopted by Captain Shaw, and it is stated in that report which I handed in on Thursday last.

3280. And that conclusion, as I understand, appears to be based upon other grounds than that of the expense which it would cause?—Yes, the report is based upon other grounds than that of the expense it would cause. I have in my hand the report made by the Works and General Purposes Committee to the Board on the 25th February last, which I handed in to the Committee at the last meeting, and I made this quotation from it, which I now read again: "Sir Joseph Bazalgette, in reply to the sub-committee, has distinctly given it as his opinion that hydrants for the purpose of extinguishing fires would not be of real practical advantage to the Board unless a sufficient pressure of water were insured."

3281. Upon the words "practical advantage to the Board;" was not that practical advantage to the Board an advantage in the way of expenditure?—No, it was an advantage from any point of view whatever; not only from the point of view of expenditure, but from that of utility also.

3282. Would it have been an advantage to the public?—I should like, in answer to that question, to say that I am only competent to state what conclusions the Board arrived at. There are other witnesses coming before this Committee who have gone into this subject much more fully than I have, and who will be able to speak upon it with more authority; some of the members of the Board, for instance.

3283. But you are speaking about a report upon which the Board has acted which you wish the Committee to take in a certain sense. I want to point out that the very words of that report seem to limit the nature of it to what it was advisable for the Board to do, looking at the question of expense, because it was distinctly placed before the Board that the comparison of the utility of these hydrants, which had been shown in Manchester, would not apply in London, because the pressure was not sufficiently great to supersede the use of engines. Then the report shows that it would not be to the advantage of the Board unless it did supersede the use of engines, and now is the question of whether that does not entirely refer to the expenditure?—It does not refer entirely to the expenditure, but I should like the Committee to judge from the report as a whole; it has been handed in, and will be printed, I believe, in the Appendix. The report finishes by saying, "Captain Shaw has also expressed himself to the same effect."

3284. That

Mr. *H. De la Hooke.*
22 May 1876.

3284. That is to say, that hydrants would not be of use?—Yes, not of sufficient use to justify the expenditure.

3285. Captain Shaw in his evidence at Question 177 given before this Committee says, "Certainly, I think so; it is most important, as viewed from my point of view, that the water supply everywhere should represent an immediate supply of water, that we could draw for ourselves and be independent of the turncocks." Then he is asked: "Supposing there was a constant supply, you would be able invariably to set the engine to work as soon as it arrived? *A.* Yes. *Q.* How are the plugs arranged; there are very few hydrants applied to London, at present, I believe? *A.* I do not distinguish at all between plugs and hydrants; I never acknowledge any distinction between them; I do not think that, mechanically speaking, there is any; but I believe it has been customary for the public to call the wooden plugs, if stuck into the pipes, "plugs," and any mechanical arrangement for getting access to the water by the name of hydrants"?—I can only state to the Committee what Captain Shaw's advice to the Board was.

3286. And then in answer to Question 1552, he says: "Certainly, as far as I am concerned professionally, I should very much like to see a hydrant placed upon every main which is charged." And in answer to Question 1556, Captain Shaw states: "There can be no doubt that the hydrant in all cases is a superior thing for our purpose; but then there is the other question of general policy, in which I certainly so far agree with my Board that I do not think that it would pay to put down hydrants where there are large districts still under intermittent supply." The whole evidence of Captain Shaw turns upon the question of expense?—You will find from the report of the Board's engineer that he has regarded the question from other points of view than that of expense.

3287. Is there any other correction you would wish to make in your evidence?—In answer to Question 3190 (I have altered this in the proof), I stated that when the committee was considering what the cost would be of providing a head-quarter station, such as Captain Shaw suggested, the architect prepared designs for a building, and that he estimated the cost of the building at 20,000 *l.* I was not certain at the time, not having the papers before me, whether the estimate was 20,000 *l.* or 30,000 *l.*, but I wished to be upon the inner side. I have referred to the architect's report since, and I find he put it at 30,000 *l.*, making the total cost of such an establishment as Captain Shaw required, upon the site which he recommended, 80,000 *l.*, instead of 70,000 *l.*, as I then stated. Then, in answer to Question 3151, I stated that an escape had been put in Sussex-road, Kensington Park, but I find that is not quite correct; the escape was placed at West Brompton.

3288. With regard to the previous correction you made, an honourable Member wishes to know if it is the same architect as valued the Watling-street premises at 10,000 *l.*?—It was the same architect; the Board's architect.

3289. Have you prepared the additional reports of Captain Shaw, which you were asked for on the last occasion?—I have copies of all the reports which I have been able to find, in which Captain Shaw has recommended any increase of the staff of the brigade, and which were not handed in by Captain Shaw himself, and printed in the Appendix, and I have also prepared a short note showing the way in which the Board have dealt with each of them.

3290. Will you put those reports in evidence?—I will. (*The same were handed in.*)

3291. What is the date of the first report?—The 8th of January 1866. That recommended the immediate purchase of six new steam fire-engines, and the Board, in the following month, ordered 11, five more than Captain Shaw had recommended. In the next report, dated 8th August 1866, Captain Shaw asked the Board to arrange for the purchase of some steam fire-engines, which, under the old London fire-engine establishment, had been hired for some years of the makers; the Board, instead of purchasing those old fire-engines which had been some time in use, ordered six new steam fire-engines, and they also made arrangements for an improved floating engine.

3292. Have you any memorandum of what was done with those which were supposed to be superseded; were they kept on?—No, I think they were handed back; but, instead of purchasing the five old ones which had been hired for some years, the Board purchased six new ones.

3293. When was the next report made?—In February 1868 Captain Shaw recommended

Mr. *H. De la Hooke.*

22 May 1876.

recommended a considerable increase in the number of officers of the fire brigade; that the number of sub-engineers should be increased to 30. That suggestion was adopted by the Board, and carried into effect in the following month.

3294. That was previous to the report that the Committee have had in evidence, dated 25th May, in which Captain Shaw called attention to the great amount of duty which the men were performing?—It was previous to that; the report of which I am now speaking relates simply to the number of officers; there was no increase in the number of men, but only a change in the ranks.

3295. What is the next one?—The next report is dated the 17th March 1868, in which Captain Shaw recommended the purchase of two improved fire-escapes as an addition to the stock; those were at once purchased by the Board. Then, upon the 21st May 1868, Captain Shaw suggested that, on account of the stock of escapes handed over by the Society for the Protection of Life from Fire, being, many of them, in a bad state of repair, 10 new escapes should be obtained in each of the next three years, to replace the worst of the old ones. This was not adopted, because the Board had just entered into a contract for the whole of the escapes to be maintained in thorough working condition during three years; old material to be replaced by new when requisite; and it was thought that, if a lot of new escapes were obtained in place of old ones, it would be relieving the contractor of part of what he had undertaken to do. On the same date, the 21st of May, Captain Shaw recommended that 50 new fire-escape watch-boxes should be obtained. These were ordered by the Board at once. Upon the same date, again, there was a further report from Captain Shaw, asking for instructions with reference to manning the new station at Wandsworth. He was instructed to place two men there. Upon the 26th October he recommended that 20 new watch-boxes should be obtained, and those were ordered on the 10th November.

3296. All those reports, which we have already had, preceded the report of the 25th of May, calling attention to the large amount of duty which the men were called upon to do, and that was referred to the chairman and deputy chairman, but nothing was done upon the 25th of May?—No, nothing was done upon the 25th of May.

3297. Then what is the next report to the Board?—On the 13th February 1869, Captain Shaw stated that he found it necessary to employ some supernumeraries, and recommended that he should be authorised to continue to employ them.

3298. That was just after Captain Shaw had recommended the three men for the Sydenham station, was it not?—Yes.

3299. In reply to which Captain Shaw was ordered to manage with the men he had?—Yes. A sub-committee inquired into the question of employing supernumeraries, and in April of the same year Captain Shaw stated that he could do without the supernumeraries during the summer, but that it was possible he might want some during the winter. The committee instructed Captain Shaw if he wanted any supernumeraries during the winter to report to them, and to get their instructions upon the subject, but he has never reported that he has wanted any since. That was subsequent to all those printed reports in which Captain Shaw spoke of supernumeraries. Then upon the 1st of March 1869, Captain Shaw presented a report showing the way in which the men were distributed and lodged at the various stations. The report showed the accommodation provided at each station. I thought that would be useful to the committee, but that was only a report for information; there was no recommendation in it. Then upon the 4th May 1870, Captain Shaw stated that some houses in Doctors' Commons, which belonged to the Board, were about to be pulled down for the purpose of the new street to the Mansion House which was then being made; he had been using that place for training men in the use of fire-escapes, and he wanted another place for that purpose, whereupon the committee authorised him upon the same day to rent a place suitable for his requirements.

3300. Was that done?—It was done.

3301. Is that rented place at present used?—No, that was in 1870. Since that time Captain Shaw has been in the occupation of other property of the Board. And then upon the 6th of December 1870, which is the date of the next report, Captain Shaw stated that the discontinuance of the station in Crown-street, Soho, rendered necessary a new arrangement at the Holborn station, which

which is set out in the report. These arrangements were approved and carried out upon the same day. Then upon the 23rd of October 1871, Captain Shaw stated that fire escapes were most urgently needed at six of those places at which I stated the other day escapes had been placed; the fire escapes were then ordered to be placed there. Upon the 20th of March 1873, Captain Shaw recommended that four mortars should be obtained to enable hose to be conveyed on shore from floating engines at the time of low water, and the Board ordered two of them to be obtained in order that the invention might be tried before further expense was incurred.

3302. Have those two been increased to four?—No, they have not been increased, because Captain Shaw has not asked the Board to increase them.

3303. He is satisfied with the two which he has at present?—I am not quite sure whether they have answered to his satisfaction. The last report which I have handed in is dated the 19th of November 1874, in which Captain Shaw recommended that 12 standposts should be obtained in consequence of the old plugs having been removed from the water pipes in a certain district, and the committee authorised them to be obtained.

3304. Sir *James Hogg.*] What was that district?—That was at Rotherhithe or Deptford, in the district of the Kent Waterworks Company.

3305. *Chairman.*] There is only one other point upon which I wish to ask you, in continuaiton of your examination, and that is with regard to the other company which has sent in letters to the Metropolitan Board of Works upon the subject of the constant supply system and the use of hydrants; that is the very company you have just referred to, the Kent Water Company, is it not?—Yes; the Kent Water Company.

3306. They have upon several occasions, I believe, written to the Board upon the subject of their having given a constant supply, have they not?—The Kent Water Company has given notice of a constant supply upon two or three occasions.

3307. Was there a letter of the Board of the 9th of July 1866 sent to the Kent Water Company?—I think that in July 1866 there was a letter sent to all the water companies.

3308. It went as a circular to all the companies, did it not?—I believe it did.

3309. That enclosed a report of Captain Shaw's, pointing out to the committee the inconvenience of the water not being constantly ready at fires, did it not?—That, I believe, was the effect of it.

3310. In that report of Captain Shaw's, which was forwarded to the different water companies, the constant service, with a sufficient number of hydrants, is recommended, is it not?—Yes, Captain Shaw does recommend that, I believe, in his report.

3311. And that has the sanction of the Board, because it was forwarded to this company, and, as you say, to all the other companies?—I do not know that the Board adopted the report; I think it was sent to the companies as a report of Captain Shaw's.

3312. Am I to understand that a letter written to this particular company upon the 9th of July 1866, by the Board's clerk, Mr. Pollard, enclosing a copy of the report made by Captain Shaw, in which those recommendations are set out, was not sent with the sanction of the Board?—I did not say that the report was not sent to the companies with the sanction of the Board, but what I said was, that I did not know whether Captain Shaw's report of that date had been adopted by the Board; it was sent to the companies as Captain Shaw's report.

3313. Under those circumstances, would it have been fair to the water companies to submit to them a report, setting out certain alterations suggested by Captain Shaw for their guidance, under cover from the Metropolitan Board of Works, and in a letter of their clerk, if it did not carry the sanction of the Board; do you suppose for one moment that that could have been done?—I think it is possible that Captain Shaw might have made a report, and that that report might have been sent to the water companies without having been adopted necessarily by the Board, but I am not prepared to speak with certainty about any report so early as that.

3314. That was in 1866, was it not?—Yes.

3315. Were you clerk to the committee of the fire brigade at that time?—I was.

Mr. *H. De la Hooke.*

22 May 1876.

3316. Are you at all aware of the reply which was sent by the company to the Board, in answer to that letter?—I am not able to say. I have not with me any notes about the Board's action upon the water question before 1871. It did not occur to me that the matter would be gone into so far back as that, but I could produce the minutes if the Committee wished it.

3317. Was there a letter written by the Metropolitan Board of Works in 1872 to the Kent Water Company, after a fire which had taken place in the Greenwich-road at the Kamptulicon Works, pointing out the delay which had taken place in the water being supplied?—I have not a note of that letter.

3318. That was in 1872?—Yes; I was going to say that it was formerly the custom of the Board to write to the water companies concerned, upon every occasion on which Captain Shaw reported that there had been any delay in the arrival of the turncocks, and those letters went nearly every month throughout the year; there were generally one or two cases at each meeting of the committee.

3319. Would the Board have under its consideration the replies which were received from the companies to such letters?—Yes; all those replies were laid before the Fire Brigade Committee.

3320. Would the reply of the Kent Company in that instance have been considered by the committee?—Yes, it would.

3321. Are you aware what the terms of that letter were?—I cannot say that I have it before me at this moment, but I could produce it.

3322. The statement which has been circulated to the Committee is that the company, in answer to the letter of the Metropolitan Board of Works, called their attention to the fact that along the whole of the Greenwich-road in front of these premises their principal main ran, which was fully charged, and that if a hydrant had been fixed upon that main an instantaneous supply of water could have been obtained; you are not aware whether that letter was considered?—I am sure if the letter was received it was considered, but I have not a note of it here.

3323. Have the Kent Water Company taken any further action with regard to the fixing of hydrants upon their mains, of which they had given notice to the Metropolitan Board of Works?—The Kent Water Company gave notice to the Board, under the 34th section of the Metropolis Water Act, 1871, that a certain district in Deptford had been brought under the constant supply system, and called upon the Board to state what hydrants the Board would require to be fixed there.

3324. That was answered by the Board in a letter of the 28th October 1873, I think, in which the Board ask for a postponement?—The Board called upon the company to fix 30 hydrants there.

3325. Did not the Board ask the water company, in February, to postpone the notice, or to withdraw it rather?—I think not; I have it here that the notice from the Kent Water Company, dated 17th September 1873, was laid before the Board upon the 26th September; it was referred to the Works and General Purposes Committee for consideration, and reported upon at a meeting of the Board of the 14th November.

3326. But before that is there not another letter from the company, dated the 11th of November, to the Board?—There may have been.

3227. In which I see they state that they are unable to agree to the withdrawal of the notice?—I think the Board at that time wished for a little more time to consider the matter. The Act of Parliament requires the decision of the Board within two months; the end of this time was drawing near without a decision being arrived at, and I think the Board asked for a little more time, but, at all events, just within the two months the Board did reply to the notice of the company, calling upon them to fix 30 hydrants.

3328. Are you aware that it was 30 hydrants, and not saddle pieces, for the after fixing of hydrants?—I will read the resolution of the Board, which was carried—"That the form of notice to the Kent Waterworks Company, now submitted, be adopted; that the drawings of the proposed hydrants and connections, and of the form of plug be approved; that one hydrant of each pattern be, in the first instance, affixed; that drawings of such hydrants and connections, and the form of plug be attached to the notice when the same shall have been completed, and the blanks filled up by the engineer; that the chairman be then requested and authorised to affix the common seal of the Board

Mr. *H. De la Hooke.*

22 May 1876.

Board to the said notice, and to sign the plan showing the position of the proposed plugs, and the drawings of the plug connections and hydrants, and that the said notice, and the plan and drawings referred to, be then forwarded to the Kent Waterworks Company." Then a letter came from the Kent Waterworks Company, dated 1st May 1874, stating that the works required to be done under the Board's order of the 14th of November, which I have just read, for giving a constant supply of water in certain parts of the parish of Rotherhithe, had been executed, and requesting that further instructions might be given for the completion of those plugs, of which only the saddle pieces had been ordered and fixed, and which, in their present condition, were not available in case of fire.

3329. But of which a certain number had been originally fixed, because there was a trial of them, was there not, in the presence of the Board?—Yes, there was.

3330. So that at first a certain number were fixed, and on the 1st May the water company again asked the Board whether they should continue the fixing of hydrants on the remaining 22 saddle pieces; is that so?—Yes, that was so.

3331. Did the company then give another formal notice with regard to a constant supply in that district?—Yes, a further notice was given by the company upon the 1st of December 1875.

3332. But upon the 8th of September 1874?—Upon the 8th of September 1874 a letter was received stating that a constant supply of water was now given in the district in Plumstead, described in the company's notice, dated the 28th of October 1873.

3333. Did the Metropolitan Board of Works take no action within the two months prescribed by the Act?—In that notice I do not think the company called upon the Board to state what hydrants the Board wished to be placed on the mains. I think the notice simply stated that a constant supply was given in that district.

3334. Was not the attention of the Metropolitan Board of Works called upon the 24th November 1874 to the fact that no instructions had been given with regard to the affixing of hydrants?—I have not a note of the letter.

3335. It is stated in this pamphlet, prepared by the Secretary of the Kent Waterworks Company that the Solicitor to the Metropolitan Board of Works then informed the company that the matter had been referred to the engineer and Captain Shaw, and that they would communicate with the Kent Water Company upon that matter as soon as they had reported; were any steps taken upon the consideration of that matter by Captain Shaw and the engineer?—I do not find a further letter upon that subject.

3336. Practically, as regards the Plumstead district, there were no instructions given by the Metropolitan Board of Works?—The Metropolitan Board of Works did not call upon the company to affix hydrants in that district.

3337. Then, upon the 14th of September 1875, was there any letter written by the Metropolitan Board of Works upon that point to the Kent Water Company?—A notice, dated the 1st of December, was received from the Kent Water Company, stating that "no instructions had been received by the company with regard to the affixing of hydrants," and asking for instructions.

3338. And that was answered on the 14th, was it not?—I think the answer was to the effect that the Board would not require hydrants to be put on.

3339. Was not the answer to the effect that the whole subject had been referred to a committee of the Board?—Upon the 14th of December, I think, a reply was sent stating that the subject was under the consideration of the committee,

3340. In that letter was not it stated that the Metropolitan Board of Works thought that under the circumstances both the application which they answered on the 14th, and the one that had been sent in on the 8th of September, had better stand over, and be postponed until the report of the committee was before them?—That was the effect of the letter.

3341. Was there a letter from the company in answer to that, dated 15th January 1876?—There was.

3342. As I understand, you have not the books with you in order to verify these letters?—Not the whole of them. There are two or three of them which do not seem to be in my notes. I have extracts here from the Minutes.

3343. My object in asking is this: these are the only two companies which

Mr. *H. De la Hooke.*

22 May 1876.

have of their own motion adopted the constant supply, and the Committee were anxious to know what plan had been followed with regard to them; did the letter of 15th January 1876 call attention to the fact that a long period had elapsed since their notices were given?—Yes, it did.

3344. And that hydrants had not been affixed?—Yes.

3345. Did the company also state that under the circumstances they proposed themselves to fix them, and to charge them upon the Board?—Yes, they did.

3346. That letter was answered upon the 26th of January, was it not?—It was.

3347. What was the answer of the Board to that?—The answer of the Board was that they were quite unprepared to assent to the view taken by the Kent Waterworks Company.

3348. That is to say, with regard to the power of the company upon refusal by the Board, themselves to fix the hydrants, and charge them to the Board?—Yes.

3349. After that, the company did put the hydrants upon the mains, did they not?—I do not think that the Board has received any intimation that hydrants have been placed upon the mains by the company,

3350. Those are the only two companies, I think, which have brought the fact of their having given a constant supply in any district to the notice of the Board?—Yes, that is so.

3351. And the action of the Board in regard to both of them has been that the Board have stated that they were considering the question of constant supply, and were not prepared to put down hydrants, as they were advised at present?—With the exception that in the case of the Kent Company the Board did put down 30 hydrants.

3352. Do I understand your answer to be that the Board, upon the application by the company, gave orders for the fixing of 30 hydrants?—Yes.

3353. Are you aware whether those 30 hydrants have been fixed?—Yes, I think they have been all fixed.

3354. Have they been used subsequently?—I am not able to say whether there have been any fires in the district subsequently which required their use.

3355. But the district is at present supplied with hydrants fixed to mains under constant supply?—Yes.

3356. And the Board have to that extent at least admitted the advantage of a system of hydrants fixed upon mains?—I cannot say that the Board have admitted the advantage of a system of hydrants fixed upon mains, because in that paper which I handed in on Thursday I find these words: this is an extract from the letter written by the Board to the East London Water Company, in which, after referring to the use of hydrants in the north of England, where constant supply under high pressure was enforced, it says: "It appeared to the Board that the necessary conditions for such a use of hydrants did not generally exist in London, but in view of the representations made by the water companies, and of an opinion which was more or less generally held that hydrants might be effective for extinguishing fires, the Board determined in November 1873 to make a trial of hydrants in one of the districts placed under constant supply on the south side of the Thames. The results of this trial were not such as to encourage the hope that hydrants could at present be brought into general use in the metropolis as a means of extinguishing fires without engines."

3357. Does not that come back exactly to the point of your answer which you wished corrected, that the consideration of the Board has simply been limited to the question whether, from the point of view of expense they could supersede engines by hydrants, and that unless they could so supersede engines by hydrants, they were not prepared to put them down, although greater efficiency might be shown in their working in putting out fires?—I do not think it quite goes so far as that in this paragraph which I have just read, although that is the point of view from which it is treated.

3358. That is the inference from that paragraph?—Perhaps so; I should like to say that members of the Board who are going to give evidence after me will be able to explain this a little more fully than I am able to do.

3359. I should not have raised that point had it not been for your setting right your answer given the other day, and leading the Committee to think that you

you wished the view of the Metropolitan Board of Works to be represented to be that it was not upon that point that they had considered it?—Not upon that point solely.

3360. You stated that after the Board had made the experiment of putting down these hydrants, they had found that the advantages arising from them would not justify them in continuing to put them down, as I understand that was the purport of your evidence?—Yes.

3361. What were the experiments made which led them to that conclusion?—Members of the Board visited the district, accompanied by Captain Shaw, and the water was turned on to see what height it could be thrown to.

3362. What was the height reached?—That I am not able to say; I was not present.

3363. Who were present at the time?—A number of the members of the Board were present, and I think that one of them will probably be able to explain what took place.

3364. Mr. *M'Lagan.*] I should like clearly to understand what part of the report of the Chief Engineer Captain Shaw indorsed; so far as I understand it, it was a report which said that it would be of no practical advantage to attach hydrants unless there was a certain pressure of water; am I right in understanding that?—Yes, that is so.

3365. It was not so much a matter of expense upon the part of the Board as the practical disadvantage of not having a sufficient pressure of water during a fire?—That was so.

3366. The engineer, I presume, in making that report wanted to reflect upon the water companies more than upon the Board of Works?—I do not know that he wanted to reflect upon anyone; he simply stated the facts which he had ascertained from his experiments and investigations.

3367. He gathered from them that there was not a sufficient pressure of water?—That is the effect of the engineer's report.

3368. In the report made by Captain Shaw of the 10th of October 1868, I understand that he recommended that if the 35 men then temporarily employed were to be permanently enrolled, he would be "quite confident that the result of such a step will be the means of removing all reasonable cause of complaint on the part of the men"?—That report was made upon the 10th of October.

3369. And those 35 men were appointed, were they not?—Yes, those 35 men were appointed.

3370. But on the 25th of May Captain Shaw had brought before the Board the laborious duties of the firemen, and the excessive work that they had to perform?—He had.

3371. Upon the 10th of October 1868 Captain Shaw was satisfied that if 35 men were appointed the objections of the men would be removed?—That is to say, 35 men in addition to another 25 who had been appointed also since May, making a total of 60.

3372. Then I find, again, that on the 14th of October 1872 Captain Shaw stated that he considered it "advisable, for the proper protection of the metropolis, to bring up the fire brigade to the force indicated in the first scheme submitted by me to the Home Secretary on the 5th of December 1864, adding 10 per cent. for the increase of London since that time"; and he said that if this proposal were adopted the fire brigade would then have about the following numbers, namely; firemen, 931. Did Captain Shaw give any reason to the Board for recommending such a large increase of firemen?—He gave no reason for recommending such a large increase of the number of firemen other than the reasons which are stated in the report itself.

3373. You do not think that the Board were justified in considering this very large increase to the brigade, when Captain Shaw stated four years before that he was quite satisfied then with an increase of 35 men, which 35 men were given to him?—I think the Board felt itself justified in the course it took.

3374. Were the conditions in 1868 the same as in 1872; first, we will take the population. What was the difference in population?—I am not able to give you the figures with regard to population.

3375. Could you give the Committee what you think would be about the average annual increase of the population of the metropolitan district; would it be 50,000?—I think the annual increase has been about 40,000.

3376. Then in four years there would be an increase of 160,000?—Yes.

Mr. *H. De la Hooke.*

22 May 1876.

3377. As regards population, can you see any reason for doubling the number of the brigade, from 1868 to 1872, when there was only an increase in the population of 160,000?—I would venture to suggest to the honourable Member that I should not be asked to express any opinion, but that I should be allowed to confine myself to stating what the Board has done.

3378. I find in the summary of duties of the Metropolitan Fire Brigade that a great part of those duties consist in mere accounting?—Yes.

3379. Is that accounting done by a regular clerk, or is it done by the fire brigade men?—All this accounting which Captain Shaw specifies in his report as being done by the fire brigade is done by the firemen themselves. A man at each station, I believe, is entrusted with that part of the duty.

3380. You cannot state what proportion of the time of the men that takes up?—I cannot state what time that takes up.

3381. But you would be aware that it must take up a good deal of time?—I should think it must take up a good deal of time, but how much I cannot say.

3382. Probably if regular clerks were appointed for such work, the firemen's time could be devoted to what I may call their regular professional duties?—I could not answer that question.

3383. Now as regards the superannuation fund, are you aware whether the Fire Brigade Committee, or the Metropolitan Board of Works, ever discussed the question with reference to whether it would be an advantage to have this superannuation fund placed in the hands of an independent commercial company, instead of their taking it in hand themselves?—The Board has never discussed that question.

3384. Sir *James Hogg*.] With regard to the questions put to you about the constant supply of water and the provision of hydrants, have not these questions been very maturely and carefully considered by the Board?—They have.

3385. Can you tell me the number of different occasions upon which the questions have been under the consideration of a committee of the whole Board?—I should think 40 or 50 times.

3386. Did not the committee make inquiries of the authorities of the principal towns in the north of England where the system of constant supply and of hydrants is in operation?—They did.

3387. Did not a special sub-committee visit Manchester and Liverpool for the purpose of ascertaining by personal observation the working of hydrants?—They did.

3388. After this visit, did not the Board instruct their engineer to make careful observations throughout the metropolis as to the pressure and other conditions which prevail?—They did.

3389. In consequence of the information gained by the visits to Manchester and Liverpool, and the report of the engineer endorsed by Captain Shaw, did not the committee arrive at the conclusion stated in the report that you handed in at the last meeting of the Committee?—That is so.

3390. Now, with regard to the pay of the men of the brigade, has any recommendation for an increase of their pay, which Captain Shaw has made to the Board, ever been refused?—No; the Board has adopted every recommendation of Captain Shaw's with regard to the pay of the men except in the case of the four superintendents, an application from whom is now under consideration by the Board.

3391. Do not the men, in addition to the regular pay and allowances, receive what is called special pay?—They do.

3392. Can you tell the Committee how many men were receiving this special pay when the last return was made?—There were 108 men receiving this special pay in the beginning of 1873 out of rather less than 400.

3393. What is the date of that return that you have in your hand?—The return is dated March 1873.

3394. Have you anything more recent?—Nothing since then.

3395. Have you any reason to believe that there has been any alteration in the amount which the men are paid?—I do not think there has been any alteration.

3396. What are those men getting?—One hundred and eight men get 3*s.* 6*d.* a week extra.

3397. Is any of that special work, the clerical work which Mr. M'Lagan asked you about?—Yes, a great deal of it is clerical work.

3398. Now

3398. Now I wish to ask you one or two questions with regard to pensions; is it not the fact that every man who has had to leave on account of infirmity not caused by his own misconduct, and who has served more than 11 years, has received a pension?—That is so.

3399. And in other cases every man has received a gratuity?—Yes.

3400. Are all these cases carefully considered by the committee, each one in detail?—Yes, each one in detail.

3401. And Captain Shaw is always present at the time?—Yes, he is.

3402. And can give his opinion if he likes?—Yes, he can.

3403. Does the committee recommend the Board in every case to give as large a gratuity as they feel justified in doing?—Yes.

3404. Sir *Henry Peek.*] I asked you at Question 2932 whether the London Salvage Corps represents the fire insurance companies, and you answered, "Yes, it does," and then you said, "Generally that is the case," but inasmuch as the fire insurance companies are charged 35 *l.* per 1,000,000 *l.*; is there any other body besides the London Salvage Corps you communicate with as representing them?—The Board never has occasion to communicate with the whole of the fire insurance offices as one body, but when we get a communication from them which professes to represent their views, it generally comes from the chairman of the London Salvage Corps.

3405. If it does not come from the chairman of the London Salvage Corps, from whom does it come?—We have had communications from Mr. Tomkinson, who calls himself the chairman of the Fire Offices Committee, a committee of associated offices. I do not know whether that is in existence now; it was some years ago; but all recent communications made to the Board on behalf of the insurance companies have come from the chairman of the salvage corps.

3406. I think you stated that the subject of the long hours that the men are employed had not been considered by the Board since 1868?—I said that no representation had been made to the Board since 1868 that the men were overworked, or worked too long.

3407. I understood you to state that, practically, nothing was brought before the Board except upon the introduction of Captain Shaw; whereas to-day you have stated that other matters connected with the putting out of fires were brought before their notice by the engineer?—I do not recollect saying that nothing connected with the putting out of fires was brought before the notice of the Board except by Captain Shaw.

3408. You were asked at Question 2929, "Although the attention of the Board had been called by the fire insurance companies to its being desirable," to which you reply, "Yes, the committee referred all the suggestions of the fire insurance companies to Captain Shaw, and the whole of Captain Shaw's recommendations were adopted." So it appears to me that if the fire insurance companies make any representations they are first filtered through Captain Shaw, and if they go through his fingers then they go before the Board, but if Captain Shaw stops them, then they never go before the Board, is that so?—These suggestions came before the Board, and the Board, or, rather, the Fire Brigade Committee, referred them to Captain Shaw, because, the suggestions being upon points connected with the working of the brigade, the Board wished to have the advantage of his opinion in the consideration of them. Then, when Captain Shaw's report was made, and his opinions and recommendations commended themselves to the Board as being right and proper, they were adopted.

3409. Then, seeing that one portion of your revenue is the 35 *l.* per 1,000,000 *l.* paid by the insurance companies, do you think that any representations made by the insurance companies have due and proper consideration, both at the hands of Captain Shaw and the Board, too?—Yes.

3410. Now, let me refer you to Question 3022. You were asked, "Is there any definite basis upon which those pensions are granted"? and your reply is: "There is no definite basis at present"; but do I understand that there is no definite basis for any other of the servants of the Metropolitan Board of Works; take, for instance, yourself, having served them for a great many years?—Yes, there is an Act of Parliament of the year 1866, which fixes a basis for the Board to calculate pensions upon for its civil officers, if I may so call them.

3411. And those firemen are not considered within that Act?—No, the Fire Brigade Act has a clause applicable to firemen apart from that.

Mr. *H. De la Hooke.*

22 May 1876.

3412. Then the firemen do not get the benefit of that superannuation arrangement which was given by the Act of Parliament you have named?—No, because they are provided for by the Fire Brigade Act itself.

3413. But they are unprovided, I understand?—The Fire Brigade Act enables the Board to give such pensions to the officers and men of the brigade as it considers desirable, and up to the present time every case has been dealt with on its merits; the Board has not, at present, fixed any definite basis.

3414. If there be a rule for the other servants of the Board, why should not that rule equally apply to the firemen and officers of the fire brigade?—The same rule would possibly not be applicable. It has been given in evidence before the Committee that the Board has prepared a scale of pensions for the fire brigade, but that it has not been accepted by the men.

3415. But the Metropolitan Board has only prepared that scale very lately?—Only very lately.

3416. And it has not been adopted yet?—No, because the men refused it.

3417. The officers of the fire brigade are not excluded by the Superannuation Act of 1866?—No, there is no mention of them.

3418. If there is no mention of them, should they not have had the advantage of that Act, which applies, as I understand you, to the other departments of the Board; does not that seem reasonable?—I think the Board's solicitor would probably explain to the Committee why the firemen do not come under the operation of the Superannuation Act of 1866. I think it is possible that the terms of it may be such as not to apply to them, although they are not excluded by name.

3419. Is it the habit of the Board to send to individuals or bodies reports of their officers which are considered as neither official nor approved by the Board?—It is not the habit of the Board to do that, but it is quite possible that a report may be sent to some other body, for instance, for its opinion to be stated upon it. I do not say that it is the habit of the Board to do that, but any communication which was made to a company or other body enclosing a report would state whether that report embodied the views of the Board, or not.

3420. But you stated that Captain Shaw's report respecting hydrants was sent to the water companies, but that it was neither official nor was it approved by the Board?—If I stated that I did not intend to do so, but I was speaking from memory, and I stated that I did not remember whether the Board had adopted that report or not; I have not the papers before me, and I could not say for certain whether the Board adopted the report, or not.

3421. But in answer to the honourable Chairman, I understood you to say that the Board had not approved of that report, and that although they had not approved of it, yet it was sent to the companies?—I did not intend to say so.

3422. Mr. *Onslow.*] Have you a list of how much the halfpenny in the pound has yielded?—I have. In 1866, the produce of the rate was 30,913 *l.*; in 1867, it was 31,795 *l.*; in 1868, it produced 33,742 *l.*; in 1869, 33,869 *l.*; in 1870, 38,998 *l.*; in 1871, 38,923 *l.*; in 1872, 41,606 *l.*; in 1873, 42,266 *l.*; in 1874, 42,810 *l.*; in 1875, 43,514 *l.*; and in 1876, the estimated produce is 48,148 *l.*

3423. Then besides that you have 10,000 *l.* annually granted from the Consolidated Fund?—Yes.

3424. And besides that you have 35 *l.* upon every 1,000,000 *l.* of insured property in the metropolis?—Yes.

3425. Could you give me a list of how much that has yielded in different years?—In 1866, it yielded 11,050 *l.*; in 1867, 11,285 *l.*; in 1868, 13,794 *l.*; in 1869, 14,391 *l.*; in 1870, 14,896 *l.*; in 1871, 15,442 *l.*; in 1872, 16,126 *l.*; in 1873, 16,475 *l.*; in 1874, 17,097 *l.*; in 1875, 18,093 *l.*; and in 1876, the estimated yield is 18,905 *l.*

3426. Can you tell me whether this amount year by year since 1866 has been actually spent on behalf of the Metropolitan Fire Brigade?—Certainly, the amount has all been spent.

3427. You have never had any surplus yet?—There may have been a surplus in one particular year in the early period of the fire brigade which has been carried on to the next year, but there has been no surplus which has not been spent on the fire brigade.

3428. Will you tell me how the Board read the term "constant service" in the

Mr. *H. De la Hooke.*

22 May 1876.

the Act; do they read it as "meaning constant service" as regards houses generally, or only for the purposes of the fire brigade?—That is a question I should prefer to be answered by the solicitor to the Board. I think he is more competent to express an opinion which would be of value than I am upon that point.

3429. At all events you can tell us this, how does the Fire Brigade Committee of the Board of Works read it?—The term "constant supply" under the Water Act of 1871 is defined in the Act of Parliament I think; but I think the honourable Member would probably get a more satisfactory answer upon this point from the Board's solicitor, who is accustomed to the interpretation of Acts of Parliament.

3430. I am not asking what the legal interpretation is, but how do your committee interpret that word "constant"?—I am afraid I am not prepared to inform you what the definite interpretation of the committee is. I think it would be better to ask that of a member of the Board who is or had been chairman of the committee.

3431. We have a map here which purports to say how much of London is covered by constant supply. Have you seen this map?—I have seen it.

3432. Are you able to say whether it is correct or not?—I am able to say that that map was prepared in the engineer's department of the Board, and that it is substantially correct, according to their information.

3433. As regards the constant supply?—Yes, that map I know is intended to show the districts in which the water companies have given notice to the Board under the Act of 1871, that they have given a constant supply. Not the districts of the water companies in which they state that the mains are charged.

3434. I think I understood you to state that it was under the advice of Captain Shaw that the Board had come to the conclusion that hydrants would be too expensive?—I think the honourable Chairman read out an answer of Captain Shaw's which bore upon that point.

3435. I understand you to state, going to another point, that the insurance companies have recommended a particular construction of float which has not been adopted by the Board; have you any letters from the insurance companies stating why they recommend that particular kind of float, and what the advantages of that particular kind of float are for the purpose of putting out fires?—Yes; I have the resolution here of the representatives of the fire insurance offices, which states, "That in view of the large amount of property, public as well as private, accumulated on the river side district, the inaccessibility of many parts of that district from the land side, the expediency of utilising the river as far as possible for extinguishing, and so preventing the extension inland of fires occurring on its banks, the attention of the Metropolitan Board of Works be requested to the extension in the most efficient form of the fire-extinguishing appliances now in operation on the river. That whereas such appliances now consist chiefly of vessels and engines of great power, but which, besides the impossibility of bringing them close in shore, owing to their draught of water, are in their operation subject to delay in arriving at the scene of a fire, and in the heavy apparatus with which they are supplied being brought into play, this service would be supplemented in a most valuable, and at the same time inexpensive, manner by the introduction of small steam-vessels, freighted with steam fire-engines of appropriate calibre, which would move with rapidity and facility, even in shallow water, and be brought promptly close to the scene of a fire, while the fire apparatus on board would be manipulated with the same ease as in the land service."

3436. I understood you to state that the reason these propositions had not been accepted by the Board was that Captain Shaw stated that these vessels would draw more water?—Not more water than the present large floats. I said that Captain Shaw stated that vessels having the propelling and pumping machinery on one bottom would draw more water than would render it advisable to purchase such vessels, and Captain Shaw recommended something different. Captain Shaw recommended that there should be some barges, or flat-bottomed boats, on which land engines could be placed, and which should be drawn by small steam tugs, and pushed close upon the shore. Captain Shaw advised against the adoption of the suggestion of the insurance offices.

3437. Have you any idea what would be the draught of such vessels as were

Mr. *H. De la Hooke.*

22 May 1876.

recommended by the fire insurance companies?—Speaking from memory, I think the lowest draught the fire-engine makers said they could make such floating fire-engines would be 20 inches, whereas Captain Shaw thinks the draught should not exceed six or eight inches for such vessels to be of great use.

3438. I understand you to say that the report of Captain Shaw of July 1874, regarding the economy in coal, and wear and tear, &c., on board the floats is still under consideration?—It is still under consideration.

3439. In that report did Captain Shaw estimate how much could be saved?—Yes, I think the report contains his estimate. He says, first, that during the year 1873 the fuel of the B Float cost nearly 800 *l.*, and of the D Float nearly 600 *l.*; and then he speaks of the saving in wear and tear of boilers and machinery which, he says, is generally very heavy, and which has cost the Board for the years 1873 and 1874 not less than 1,300 *l.* or 1,400 *l.* Then he gives his estimate of the cost of what he proposes, and shows that a saving would be effected if that were adopted.

3440. According to that it shows there would be a saving of about 2,400 *l.*; you see it in that paragraph: "I estimate that the expense of keeping up fires in the four small tug-boats would not exceed 160 *l.* a year, so that on this item alone there would be a saving of more than 1,200 *l.*," and 1,200 *l.* more on the wear and tear, making 2,400 *l.*?—Yes, but that would not be all saving I imagine.

3441. According to this estimate, Captain Shaw says there would be a saving?—He says there would be a saving in the keeping up of the fires, but the machinery of the large vessels would still be brought into operation sometimes; the cost of keeping them in order would not be all saved, but in the fuel there would be a saving undoubtedly.

3442. But the Board has not adopted that suggestion yet?—The Board has not adopted that suggestion as yet.

3443. Are you aware how soon that suggestion may be adopted by the Board?—I cannot say.

3444. The matter has been nearly two years under consideration, has it not?—I know that the committee has considered the matter a good many times, and has made considerable progress towards arriving at a conclusion, but I cannot say how soon a conclusion will be come to.

3445. Could you state briefly the reason of the delay?—I endeavoured to state clearly the reason for the delay on the last occasion when I was examined, and it was this: that some of the members of the committee did not quite agree with what Captain Shaw said, but thought that there was more in the suggestions of the insurance offices than Captain Shaw seemed to think; these members thought that possibly small floats, having all the machinery upon one bottom, would be better than having it divided, as Captain Shaw recommended. A sub-committee have had interviews with the fire-engine makers, and have gone into the question very thoroughly, and they have got nearly all the information now before them to enable them to arrive shortly at a decision.

3446. Are any men, that is to say supernumeraries, now hired for the purposes of the fire brigade?—No; there are no supernumeraries, I believe, other than a few drivers and watermen.

3447. I wish just to call your attention to that case of Radford; if you recollect, his pay was 2 *l.* 9 *s.* at the time of his death, and it is estimated that the cost of his lodgings, coal, &c., would be about 1 *l.* more?—It would be about 15 *s.*

3448. Then his pension was calculated upon the 2 *l.* 9 *s.*, which was his actual pay, and not upon the actual pay and allowances?—It was calculated upon the pay alone, or rather, I would say, it was not calculated upon any definite basis; but I pointed out that if it had been calculated upon the scale of the metropolitan police his pension would have exceeded by very little what he actually received. In saying that, however, I simply took into account the actual pay which he was receiving.

3449. But according to the rules of the metropolitan police he would have received 17-50ths of his pay, having served 17 years?—He would have done so.

3450. And 17-50ths of 2 *l.* 9 *s.*, *plus* 15 *s.*, would be considerably more than the Board allowed him?—Seventeen-fiftieths of 49 *s.* would have been 16 *s.* 8 *d.*; in

in fact, he received 16 *s.* Of course if the value of his lodgings and coal had been taken into account his pension would have been rather more.

3451. Considering the number of men who leave the brigade, has the Board very carefully considered these reasons with a view to keeping the men in the brigade?—The Board has ascertained the reasons of leaving from Captain Shaw, and I think one of the members of the Board who has been inquiring into this subject very carefully will come before this Committee, and explain the result of his consideration of the subject.

3452. In Captain Shaw's letter of the 25th May 1868, we have a tabulated statement of the number of duties performed during the month, the average number of duties each day, and the average number of duties done by each man in each day of 24 hours. That was before the additions which have been made to the brigade since, was it not?—It was.

3453. Have you a similar tabulated statement up to this date?—No; Captain Shaw has not presented any statement of that kind lately.

3454. The Board has made no application to Captain Shaw for a list of this kind since?—No.

3455. Are you aware whether there is any outside society which gives relief to broken down firemen?—I am not aware that there is any properly constituted society. I have heard of one so-called society through the proceedings taken against some of their collectors by the Society for Organising Charitable Relief and Repressing Mendicity. I have seen that collectors of a so-called society have been prosecuted by the directors of the Charitable Relief Society; that is all I know about it.

3456. With regard to the case of Ford, I understood you to state that the Board would have given Ford's widow more if such a heavy subscription had not been made for her by the public?—There is no doubt the Board would have given Ford's widow a pension for life; they were very anxious to do so I believe, and would much have preferred giving her a pension to letting her be provided for in the way she was; but seeing that this large sum of money was subscribed, the Board thought it would not be right to increase her income further.

3457. Can you mention any other similar case in which the Board have not given so much as they otherwise would, in consequence of money having been subscribed by the public?—I believe that is the only case of the kind.

3458. Mr. *Ritchie.*] The honourable Chairman of the Metropolitan Board of Works asked you with regard to the extra pay for clerks' work that some of the men were receiving; you are not aware, I suppose, that the men have any complaint to make with regard to their pay?—No, no complaint has been made to the Board with regard to that.

3459. The pay has not been one of the representations which have ever been put in the form of a complaint before the Board?—No.

3460. With regard to this map that we have here, you say that it was prepared in the engineer's department; can you tell me who instructed the engineer to prepare the map?—I believe the Chairman of the Board instructed him.

3461. In answer to Question 2878, with regard to the hydrants you said the Board wished to do nothing until they dealt with the whole question?—I stated that the Board wished to consider the whole question.

3462. What do you mean by "the whole question"?—The whole question of whether it was desirable, or whether it would be of public utility under the existing conditions of the water supply, to affix hydrants. That whole question has been under the consideration of the Board this long time, and has resulted in the presentation to the Board by the Works Committee of that Report which I have handed in.

3463. Has it been brought to the knowledge of the Board that the East London Company have 70 miles under constant pressure of at least 40 feet in their district?—That may have been stated in a letter from the company.

3464. This is in a letter to the Board, dated 13th April 1876, that the pressure practically aimed at is that which is enough to supply houses to the height of 40 feet; do you know anything about the height of the houses in the eastern district?—No, I could not give evidence with regard to that.

3465. Is it the fact that upon this 70 miles of pipe there are at present neither plugs nor hydrants?—I cannot state whether that is so or not.

3466. Do you know whether in January 1875 the East London Company offered to instruct firemen with reference to the position of their mains and ser-

Mr. *H. De la Hooke.*

22 May 1876.

vices, and to provide and mark on illustrated maps the position of all plugs available for fire service, so as to enable the men to get immediate access to the water; that is stated at page 26 of the pamphlet?—That is in a letter of the company.

3467. Was anything done with regard to this offer by the Board?—The Board has not acted upon that offer.

3468. In their answer, do they refer at all to that communication?—I do not think in the Board's answer any reference was made to that particular point.

3469. In your answer to Question 2862 you say, "Yes, two of the water companies have initiated a system of constant supply, the East London Company and the Kent Company"; is it not the fact that, in addition to those two companies, the New River Company have 169 miles charged with constant supply; the Southwark and Vauxhall Company, 100 miles of constant supply; the West Middlesex, 70 miles; the Grand Junction Waterworks Company, 41½ miles; the Lambeth Waterworks Company, 90 miles; and the Chelsea Waterworks Company, 50 miles; and that this fact has been brought to the knowledge of the Board?—I believe those statements are made in Major Bolton's report.

3470. Has that report been brought before the committee?—It has been laid before the Board.

3471. Is it not the fact that the matter has been more immediately brought before them by a letter of the East London Company?—Yes; the last letter from the East London Water Company contains an extract from Major Bolton's report.

3472. I ask you whether it has not been brought to the knowledge of the Board that the New River Company have 25 miles of pipe constantly charged within the City alone, with a pressure from a reservoir of 126½ feet above high-water mark, and that hydrants could be so placed with very little addition within the City so as to ensure every house within it being within 50 yards of a hydrant; was not that brought before the Board in 1872 by the engineer to the New River Company?—I have not anything before me to show that that was done.

3473. But it might have been?—I do not remember its having been done. I do not remember a communication being received from the New River Company to that effect.

3474. You say that the cost of placing hydrants was one of the reasons why they have not been placed?—Yes, it was one of the reasons.

3475. Has it never, during the discussions which have taken place on this subject before the Board, been recognised that an expenditure for hydrants must ultimately be made at some time or other when that system is completed; that is to say, have they never recognised the fact that at some time or other hydrants will have to be placed throughout the metropolis, if the water supply becomes what they would wish it to be?—I think the Board has considered that possibly, at a future time, hydrants may have to be placed throughout the metropolis.

3476. The cost would be no greater, I suppose, in putting up hydrants at present where they can be made useful, than if the putting up of them were deferred until the whole of the metropolis was furnished with constant supply, would it?—I can hardly answer that question.

3477. Is it not a question which you could answer as a matter of fact, that if hydrants were now put up where a constant supply was obtainable, that expense of course would not have to be incurred again when the whole metropolis was dealt with?—That may be so.

3478. So that by putting them up just now in the districts where constant pressure was available, it is merely doing that in a gradual form which the committee recognise will ultimately have to be done as a whole?—That may be so.

3479. Captain Shaw told us that the Board had, until lately, written to the companies about every case of late or non-attendance of the turncocks?—Yes.

3480. Do you know why the Metropolitan Board of Works have ceased to write to the companies?—For this reason, that the letters which were written seemed to produce no practical advantage, and Captain Shaw has always told the committee that the water companies and their officials do all they can to facilitate the work of the fire brigade.

3481. Does the Board not consider it of importance that the water should be got at readily?—The Board considers it of importance.

3482. Have the Board discontinued the putting up of tablets to show where the plugs are?—The Board has not put up any tablets indicating the situation of the fire plugs.

3483. Will you tell me why?—Because Captain Shaw has always stated that the firemen had no difficulty in finding the plugs.

3484. Do you mean to say that Captain Shaw has stated that the firemen had no difficulty in finding the plugs?—I think I am right in saying that Captain Shaw has always stated that. We have had letters occasionally from particular localities stating that there was a delay in extinguishing a fire on account of the water not being accessible, and sometimes complaint has been made that the plug has not been quickly found, but Captain Shaw has always stated to the committee, if my memory serves me rightly, that the fire brigade find no difficulty in laying their hands upon the plugs at any time.

3485. You heard Captain Shaw give evidence before this Committee, did you not?—I did.

3486. As a matter of fact, the Board have discontinued the practice of putting up tablets, have they not?—The Board has not put up any fire-plug indicators or tablets.

3487. I should like to refer you to your answer to Question 2909. You say there that you understood that the distance from the original station in Farringdon-street to the new one in the Farringdon-road was about one-third of a mile; are you still of that opinion?—I was so informed by a member of the Board acquainted with the locality.

3488. I have measured it upon the map, and I find the distance is two-thirds of a mile. Then you say, in answer to Question 2904, that the station in Wells-street, Oxford-street, was discontinued upon the advice of Captain Shaw. Was the Farringdon-street station also discontinued on the advice of Captain Shaw?—No, that was not discontinued upon the advice of Captain Shaw.

3489. On the contrary, did he not protest against its being closed?—I cannot say that he protested against it; he made no report against it; but the station was not removed upon his advice, I know.

3490. Do not you know that it was done contrary to the advice of Captain Shaw?—I believe Captain Shaw thought it would be better to retain it.

3491. With regard to your answer to Question 3247, I understand you to imply that Captain Shaw advised the stations at Sloane-square and the Horseferry-road to be closed; is that so?—Captain Shaw wished the position of those two stations to be altered; they were small and inconvenient places, but the Board decided to discontinue them altogether, thinking they were not necessary, looking to the position of the new stations which the Board had erected.

3492. Were new stations erected in place of them?—The new stations erected by the Board are referred to in that answer; in Victoria-street, Westminster, and at Brompton; the Board thought that those two new stations sufficiently covered the area in which the two small stations in Sloane-square and the Horseferry-road were situated.

3493. Did Captain Shaw recommend that the fire-engine station in the Waterloo-road should be discontinued?—He did not.

3494. Did Captain Shaw object to the discontinuance of that station?—Yes, he expressed his opinion against it.

3495. Have you the report which he sent in to that effect?—I think I have.

3496. I hold in my hand a report, dated 17th December 1870, which says: "The fire-engine station at Waterloo-road occupies one of the most important positions in the whole of the metropolis, being surrounded with buildings of every kind for manufacturing, storing, and other purposes, such as shop fitters, cabinet makers, varnish makers, india-rubber works, builders, timber merchants; and there are also two theatres, two music halls, St. Thomas's Hospital, army clothing store, and other large places in close proximity. Besides this the road is particularly noted for having a fire-engine station, inasmuch as it has never been without one for upwards of 100 years. The station is very well placed for sending help to the north side of the river, particularly those parts towards Westminster, Charing Cross, the Strand, Covent Garden, &c.; indeed I have always been in the habit of employing the Waterloo-road engine and men for those places in precisely the same way as the engines and men of the districts on the north side, and there can be no doubt that the removal of the station would

Mr. *H. De la Hooke.* 22 May 1876.

would have the effect of leaving a very large area, containing a great deal of risk, comparatively unprotected; I think that the object of the Committee would probably be sufficiently attained by reducing the size of the station considerably; as, for instance, by removing all the men, except those necessary to work the two escapes, and one small engine with or without horses, all of which could be accommodated at very much less expense, and in much smaller premises than at present"?—That is his report.

3497. Notwithstanding that report, the Waterloo-road station was closed?—It was, but it has since been re-opened, I may say.

3498. When was it that that station was re-opened?—In the middle of last year, I think. It was not closed until 1872, and was re-opened last year.

3499. In the same building?—Yes, in the same building.

3500. What was done with the building in the interval?—The premises were adapted for workshops for the fire brigade, and being opened as workshops it was found that an engine might be placed there, and that it might be utilised for attending fires in the immediate neighbourhood.

3501. So that the advice of Captain Shaw, which was rejected when he made that report, has been practically carried out now, after an interval of some years?—Yes, it has been carried out now, after an interval of some years.

3502. With regard to the Sloane-square station; that was closed, was it not, very summarily against Captain Shaw's advice?—It was.

3503. He protested very strongly against the closing, did he not?—He expressed his opinion against it.

3504. Have there come within your knowledge the telegrams which passed between Captain Shaw and Mr. Hinchliff upon the question of closing that station?—I think I remember them.

3505. Is it correct to say that Mr. Hinchliff telegraphed to Captain Shaw, on the 24th December 1868, "Could you give up possession of Sloane-square station, if necessary, to-day"; and Captain Shaw replied, "I could not do so without an order from the chairman, and I have no doubt that he would refuse to sign such an order, and it would have the effect of leaving the district about Sloane-square without any protection." Who is Mr. Hinchliff, may I ask?—He is an assistant in the solicitor's department of the Board.

3506. Mr. Hinchliff replied by telegraph, "It is ordered by the committee. Mr. H. wants to know the earliest time, as the vestry of Chelsea gives up possession to-morrow;" to which the answer is, "I can, of course, remove the fire-engine, the three fire-escapes, and the firemen at once; but it would be a serious responsibility to do so, and I must have an order in writing from the Board or the Chairman before I do." Upon the same date Mr. Pollard writes to Captain Shaw: "Dear Sir,—At the meeting of the Fire Brigade Committee on Tuesday last it was ordered, 'That the stations at Horseferry-road and Sloane-square be given up at the earliest period at which the tenancy in each case can be determined.' With regard to the Sloane-square station, the solicitor, on looking into the matter, has found that the vestry of Chelsea, under whom we hold it, are tenants of it up to Christmas, 1868, at which period their tenancy expires. It is, therefore, necessary for the engine to be removed, and the premises given up to-day, otherwise a new tenancy will be created which will perhaps occasion considerable difficulty. Will you, therefore, be good enough to give up the engine-house at once? As regards the station in Horseferry-road, the tenancy of that cannot be made to expire yet, and notice will have to be given." Then, upon the same day, Captain Shaw writes to Mr. Pollard: "Dear Sir,—In accordance with the instructions contained in your letter of this date, I have ordered the immediate removal of the engine from Draycott-place, and consequently before this letter reaches your hands the district in that neighbourhood will have been deprived of a protection which it has had for many years. Your letter is so clear and explicit that it leaves me no option in the matter, and I have therefore had no hesitation in giving immediate orders on the subject, but I must say plainly that I consider the removal of this engine a serious responsibility, and that in my opinion, if the Chairman does not yet know what has been done, he should be informed of it at once, with a view to some measures being taken for the protection of the very large and important neighbourhood surrounding Sloane-square. I have no doubt whatever of your accuracy in conveying to me the instructions of the Board, but I cannot bring myself to believe that they fully realised the serious consequences which might result from such a step

a step as they have ordered me to take, and I am convinced that when the Chairman considers or re-considers the matter, whichever it may be, he will give me some instructions for the purpose of obviating this fearful risk."

The Committee room was cleared, and after a short time the Witness was re-admitted.

3507. Will you take the correspondence into your hand (*handing the same to the Witness*) and say whether it is authentic or not, as far as your knowledge enables you to do so?—Yes, this is authentic.

3508. Was the correspondence with regard to that station within your cognisance?—It was.

3509. The last letter I read upon the matter was one dated 24th December, from Captain Shaw to Mr. Pollard; the reply to that by Mr. Pollard is of the same date. "Dear Sir,—I have just received your letter with regard to the Sloane-square station. If the removal of the engine is a matter of such serious consequence, it appears almost a pity that you did not explain this to the committee at the time when this subject was under their consideration, and so fully discussed. The chairman is not here to-day, but is at his house, Meaburn House, Upper Richmond-road, Putney, so that if you wish to consult him upon the subject the best way would be for you to go and see him there." The next letter is of the same date to Mr. Pollard from Captain Shaw. "Dear Sir,—I cannot presume to do as you suggest about going to see the chairman, lest I should appear in any way to hesitate about carrying out the order of the Board so clearly and definitely conveyed to me in your previous letter of this date. I have only to add that I consider the responsibility of the step so great that if the instructions contained in your letter had been less clear and peremptory I should positively have disobeyed the order, but under the circumstances no course was open to me but simply to obey, and I have done so." The next letter is one dated 24th December, from Captain Shaw to Mr. Pollard. "I have to report that in accordance with instructions contained in the clerk's letter of this date, I have removed the fire-engine from the Chelsea station, and I beg to recommend that immediate steps be taken to provide protection for that important neighbourhood. I have placed a curricle engine for the present close to the watch-box in Sloane-square, but this is quite insufficient for dealing with a large fire, and will not be allowed to stand there by day. I should recommend that a circular be issued to the parish, police, and other public authorities of the neighbourhood, stating what has been done." And the last letter is dated the 28th December, from Captain Shaw, which says, "In continuation of my report of the 24th instant, I have now further to report that I have placed a curricle temporarily close by the escape in Sloane-square, and covered it with the tarpaulin of the escape. I have also placed six hand pumps in the watch-room, and given instructions to have as many men as possible kept at home until some more satisfactory arrangement is made. In the event of a fire happening in the neighbourhood, every possible effort will be made for the protection of life and property, but there can be no doubt that the present risk is very serious;" is that, as far as you are aware, the whole of the correspondence with regard to the closing on that day of that station?—It is.

3510. Do you wish to make any remarks upon it, because it was so directly in the face of Captain Shaw's advice that I thought it right to give you an opportunity of explaining it?—I can only say that the committee thoroughly considered the question, and it appeared to them that with the two new stations which the Board had erected, and which were not there in 1866, the whole district was sufficiently protected, and that it was not necessary to continue the two small stations in Sloane-square and Horseferry-road.

3511. *Chairman.*] Did the Board become aware of these two reports of Captain Shaw's pointing out the serious risk entailed, or was that merely the correspondence which took place between Captain Shaw and the Secretary, Mr. Pollard; as I understand, first, the Board comes to a decision to remove those stations, and then a correspondence takes place between Captain Shaw and the solicitor to the Board with regard to their removal, in which Captain Shaw points out the critical state of the neighbourhood should it be carried out; we should like to see any Minutes showing that these letters were brought to the notice of the Board, and that they re-considered the matter after having heard of this critical position?—Those letters were laid before the Fire Brigade

Mr. *H. De la Hooke.* 22 May 1876.

Committee at its next meeting, but in the meantime the Sloane-square station was closed because it was found that the tenancy of it expired upon the 25th of December, and under the order given by the committee that station had to be closed at once. The correspondence between Captain Shaw and the Clerk of the Board, which the honourable Member has just read, was laid before the Fire Brigade Committee upon its first meeting after the 25th of December.

3512. But the Board were not called together to consider its responsibility before this arrangement was absolutely carried out?—No, they were not called together for that purpose.

3513. Mr. *Ritchie.*] I suppose Captain Shaw was aware of the existence of these other stations when he wrote these letters?—I believe he was.

3514. Sir *James Hogg.*] The anticipated danger has never arisen, I believe?—I believe there has been no evil result.

3515. Mr. *Ritchie.*] Now, will you refer to Question 2974. You say there, "in the month of March 1868, upon the recommendation of Captain Shaw, the Board decided that it would not in future provide married men's quarters until the firemen had reached the second class; that is to say, that only officers and first and second-class firemen should be provided with married men's quarters, and that if men in the lower class got married they must provide their quarters at their own expense." Was this recommendation not in consequence of the committee having urgently impressed upon Captain Shaw their inability to provide lodgings for all classes?—I do not think it was; I do not find that any such intimation was given to Captain Shaw by the committee.

3516. You say Captain Shaw made his recommendation in March 1868; have you got the report of March 1868, in which Captain Shaw made that recommendation?—I have it here.

3517. Will you kindly read it?—The report is dated the 6th of February 1868: "I have to report that, looking to the future, it is most desirable, as far as possible, to prevent the entering of married men into the lower ranks of the brigade, and with this view I should recommend that no man who joins after this time be provided with married men's rooms until he has been promoted to the second class."

3518. Will you now refer to Question 2982. You were asked: "Do you know whether the men have ever represented that it was a hardship upon them to have to live in lodgings outside the stations;" to which you reply, "I do not remember that they have at this moment." Then you were again asked: "Upon the ground that, limited as they must be to a very close area in order that they might be quickly upon the spot, they were practically forced very often into unhealthy or very dear apartments"; to which you reply, "I do not remember the men making any such representations." Do you still adhere to that answer, that the men have made no such representation?—I still say that I do not remember the men having made any such representation.

3519. Then I presume, of course, that you have no representation dated the 2nd November 1871 upon the subject?—On referring I find there is such a representation forwarded to the Board upon that date.

3520. Will you read the minute of the Board upon that occasion?—This is the minute of the committee: "The chief officer presented a petition signed by E. C. Shepherd and 21 other firemen of the third class, asking that they might be allowed married men's quarters, and it was resolved that the memorialists be informed that the limited accommodation in the various stations will not allow of it."

3521. In point of fact, that was put before the Fire Brigade Committee?—It was.

3522. Do you still adhere to the opinion you have expressed, that Captain Shaw has never, verbally or otherwise, since 1868 notified the fact that the men have been over-worked?—I still say that I do not remember that having been done.

3523. Do you know whether it was ever brought before the committee, or whether there was ever any consideration of the point, that looking at the minimum number of men that Captain Shaw said in his original estimate he would require, and looking at the fire-escapes which have been taken over since that time, the number of men he originally asked for was really in the brigade, after deducting the fire-escapes which were not existing then?—I do not remember that that point has ever formed a subject of discussion.

3524. Do you not remember that it ever came before the Board whether the number of men whom Captain Shaw said he would require for the performance of the duties originally, was ever come up to by the number of men in the service of the brigade?—I do not remember whether that was so.

3525. In one of the reports which you have handed in, Captain Shaw says, "I see no other way in which the watches can be kept up with our very small force"?—That is one of the reports which I have handed in to-day, in which Captain Shaw said that he was employing a certain number of supernumeraries, and recommended that the number of rupernumeraries should be continued. In the month of April however, after that report Captain Shaw stated to the committee that he would be able to do without supernumeraries in the summer, but that in the winter he might be obliged to have recourse to them, and the committee instructed Captain Shaw to do without them in the summer, as he suggested, and that if he wanted them in the winter he was to apply to the committee again, but I do not find that he made any application for them.

3526. I do not know whether you remember Captain Shaw stating that it was obvious that if he had had the money himself to dispose of he would have disposed of part of it in the immediate increase of the brigade?—I remember Captain Shaw saying that before this Committee, but I remember him saying no such thing to the Fire Brigade Committee; and if the Committee would permit me to say a word upon that point, I would remark that the Board had no power whatever to spend upon men or upon wages, or upon any part of the current expenditure of the brigade, a single penny of what was spent in the purchase of land, and in the erection of stations; the whole of the money spent in the purchase of land and buildings came out of the proceeds of the issue of Consolidated Stock, which could only be appropriated to buying land, building stations, and providing permanent plant. On the other hand, the spending of that money in building stations saved an annual expenditure, inasmuch as it got rid of the annual payment for rent of lodgings, and therefore the brigade was advantaged in every way from the spending of this money, although I understood Captain Shaw to have stated that he would have spent it in a different way.

3527. Do you know how much the Board pays now for lodgings?—I do not know; I think it is something like 1,500*l.* a year.

3528. Then they might have built stations and saved that; you say they might have saved it in rent; they might have saved that money too, might they not?—I explained the other day that, between 1865 and 1869, when the Board's Loans Act was passed, the Board was limited to a capital expenditure of 40,000*l.*, and having that limit always in view the Board was hampered, and was not able to build stations so large and so complete as it would have done if there had been no such limit, and as it has built them since.

3529. Since 1869, have the Board had unlimited powers?—The Board has not unlimited powers, but it has greatly extended powers, and, as I ventured the other day to suggest, the Board's accountant will be able to come before the Committee in a day or two and explain precisely what the Board's financial position in respect of the fire brigade is and has been.

3530. But if the Board had enlarged these stations previously to 1869, the rent paid for the men at present might have been saved?—There might have been some saving if there had been an addition, probably, but I think the accountant will say that the Board's capital funds for fire brigade purposes have been exhausted up to this time.

3531. You say that the scheme of 1872 for the enlargement of the brigade fell dead at once; was the scheme reported to the full Board?—No, the scheme was not reported to the Board by the committee.

3532. Had the committee any idea of granting some amount of extension at the time when they asked Captain Shaw to prepare that scheme?—The committee had before them a proposal to put up a fire-escape and a fire-station somewhere, and they had under their consideration what would be necessary to give the metropolis proper protection, and Captain Shaw was asked to state his views.

3533. Has the advisability of applying to Parliament for more funds for this purpose ever come under the consideration of the committee?—The question did come under consideration.

3534. And what was done with it at the time when it came under considera-

Mr. *H. De la Hooke.*

22 May 1876.

tion; what conclusion was arrived at?—The Board determined not to make any such application at that time.

3535. Did they determine not to do so, because it was unnecessary to do so in their opinion?—I think the Board had always before it the very stringent way in which, before the Fire Brigade Act was passed, Sir George Grey, who was Home Secretary in 1864 and 1865. insisted upon Captain Shaw's estimates being cut down, so as to be covered by the proceeds of a halfpenny rate, and of the other sources of income.

3536. When was that?—In 1864, I think. But I should say that the question of applying for more funds is rather a question of policy, which some members of the Board will, I think, explain more fully than I can.

3537. Now, I will refer you to Questions 2990 and 2991. You say there that the architect of the brigade was entrusted with the preparation of a medal, as he was a man of taste. What was that gentleman's name?—His name was Cresy.

3538. Is that the gentleman whose name I see shown in the Metropolitan Board of Works Pocket-book and Diary for 1867, as the principal assistant clerk?—That is he.

3539. You occupy the position which he then occupied, do you not?—I do, as regards the clerkship.

3540. But this gentleman is not put down here as the architect?—No; but he was an architect, and he was brought up as such. His father was an architect, and he was formerly in the service of the Metropolitan Commissioners of Sewers as a surveyor. When the Metropolitan Board of Works was first established, he, at the special request of Sir John Thwaites, who wanted technical advice and assistance, acted as his secretary, and he had the title of principal assistant clerk.

3541. He acted as his secretary, and principal assistant clerk, and as architect?—I do not say he acted generally as architect; but in 1865, when the Board was making arrangements for the fire brigade, the superintending architect of the Board, who had a great amount of business in hand at that time, suggested to the Board that the work of finding sites and building fire-engine stations might be properly entrusted to Mr. Cresy, if the Board thought fit, as he was a competent man; and accordingly the work was entrusted to him.

3542. In addition to this gentleman I understand there was an architect, and one not classified in the architect's department; there is Mr. G. Vulliamy and Mr. F. W. Goddard?—Mr. Vulliamy is the superintending architect of the Board, who is entrusted with all the architectural work, all the Board's street improvements, and everything in that way that the Board has to carry out.

3543. And he has an assistant surveyor, Mr. Goddard?—Mr. Goddard is a gentleman who values property which has to be acquired for street improvements; he is not an architect.

3544. He is the surveyor and valuer?—Yes.

3545. Is he a permanent official?—Yes.

3546. But in consequence of the architect's department having so much to do at that time, the duty of architect was given to a gentleman who was the chairman's secretary, and also the principal assistant clerk to the Board?—Yes.

3547. I suppose his salary was increased accordingly?—He had a special allowance as architect to the fire brigade.

3548. What was the special allowance made to him?—£. 200 a year.

3549. I suppose that was debited to the funds of the fire brigade?—Yes.

3550. You occupy the same position, do you not, as Mr. Cresy did with regard to the principal assistant clerkship?—Yes.

3551. I suppose you find your time pretty much occupied?—Yes, but although I have the same title as Mr. Cresy, I have different work from what Mr. Cresy had; he had not the same amount of work as assistant clerk that I have; he was engaged mainly in assisting Sir John Thwaites with his engineering and technical knowledge. When the metropolitan main drainage, the embankment of the Thames and other great works were being carried out by the Board, Sir John Thwaites had great need of a professional assistant, sitting as he did also upon several Royal Commissions.

3552. A great many additional stations were built at that time?—I daresay Mr. Cresy built about 14 or 15 stations of the fire brigade.

3553. When

3553. When Mr. Cresy died, was his position filled up by any other appointment?—When Mr. Cresy died the duties were transferred to the Board's superintending architect, who then had rather more time to attend to them, and a gentleman was engaged to carry them out, under Mr. Vulliamy's direction.

3554. I suppose we shall hear from the accountant the cost of the repairs to the stations which he erected at that time?—He will be able to give you that information.

3555. I should very much like to have before the Committee the money which has been expended in those stations in repairs from that time to this?—I could hand in a return which was laid before the Fire Brigade Committee in 1870, of the cost of all the stations built under Mr. Cresy's superintendence, and the repairs to the stations at that time.

3556. The fact that this gentleman had so much to do would fully account for his not having had time to draw out a design for this medal?—I daresay that would be a reason for his not having done so.

3557. Do you maintain that the getting out of this medal was ever seriously under the consideration of the Board?—I can produce the resolution I referred to the other day instructing Mr. Cresy to prepare a design.

3558. There was a report upon the 26th May 1868 by Captain Shaw with regard to that, was there not?—On the first occasion when Captain Shaw recommended that a simple badge of merit should be established, the resolution of the committee was that the chief officer should submit to the committee at the next meeting a pattern of the badges of merit which he proposed, and then Captain Shaw brought up two or three designs, made, I think, by one of his men. He brought up a report on the 17th December 1868, saying; "In accordance with the order of the committee, I have to report that I consider a plain medal of any of the accompanying patterns the simplest and most useful form of recognition"; but the patterns did not commend themselves to the committee as suitable, and it was resolved that Mr. Cresy shall prepare a design.

3559. Has any discussion taken place on that resolution from that date to this?—No; as I think I explained the other day, the Fire Brigade Committee has been under the impression that the firemen were satisfied with the rewards given by the Society for the Protection of Life from Fire.

3560. From what data did the committee form that impression?—Simply because subsequently to the order for the preparation of a badge of merit complaints were made to the Fire Brigade Committee that all the men recommended by Captain Shaw as deserving of rewards did not receive rewards from the society. A deputation then came up from the society to the committee, and after hearing what the men's complaints were, the society's representatives expressed their desire to meet the wishes of the men and of Captain Shaw, and to do what they could to reward the men properly, and it was understood that that was satisfactory.

3561. It was, perhaps, a misapprehension on my part, but I understood that Captain Shaw advised some mark of merit in any case, and that it was not merely as a substitution for certain rewards which the men obtained outside the brigade, but that he thought a recognition on the part of the Fire Brigade Committee of distinguished merit was a thing which, in any case, ought to proceed from the Board?—Captain Shaw only made that recommendation when he was mentioning the rewards given by the society; it was when referring to the one that he suggested the other. Captain Shaw recommended no badge of merit of any kind until some time after this society had expressed its desire to continue the system which had been in force of rewarding men who had displayed merit in saving lives from fire.

3562. *Chairman.*] Setting aside the question of the men being rewarded by the society, Captain Shaw, in this report of 5th November, recommends a badge of merit, with a view of giving the men a greater inducement to remain in the force?—But he does that upon the ground stated in the first paragraph of his report, that the present arrangement with regard to giving rewards to men for saving life from fire is not working satisfactorily. The Fire Brigade Committee however, considered, after the interview with the society, that the case would be met by requesting Captain Shaw to place the men, in future, whom he recommended to the society in order of merit.

3563. Mr. *Onslow.*] At what date was that?—I find that the last occasion when

Mr. *H. De la Hooke.*

22 May 1876.

when the question of rewarding firemen by this society was under the consideration of the Board was on the 24th February 1874.

3564. Mr. *Ritchie.*] But you say that you had an interview with the society; I want to know what that date was?—That was in 1872; then again in 1874 the subject was under consideration, and it was then moved by Mr. Lammin, seconded by Sir William Codrington, and resolved, "That the chief officer do in future, in making recommendations of firemen for rewards for saving life, place the names of the men in the order of merit." That was resolved upon; so that the society might see distinctly, from the order in which the names were placed, which men were considered to be most meritorious.

3565. That is what you say was considered by the Board a substitution for the original idea of decoration?—Yes; the idea of a decoration passed into forgetfulness.

3566. So that, between 1868, when the medal was ordered to be prepared, and 1872, nothing whatever was done to carry out the recommendation?—The rewards were being given every six months by the society.

3567. But you say that it was in 1872 when the Board first thought that the other arrangements, which were then being made by the charitable association, satisfied the men?—No; I do not say that they first thought so in 1872.

3568. When did they first think so?—The society apply to the Board every six months for a list of the men who have distinguished themselves in saving life from fire. A return is always made by Captain Shaw for the six months, and I suppose, if Captain Shaw had supposed that the institution of this badge of merit had been a matter of great importance to the fire brigade, he would have been able to suggest to the committee that, as Mr. Cresy had died, the matter should be taken up again.

3569. There was a long time between the date of the resolution and the death of Mr. Cresy, was there not?—Yes, more than a year.

3570. Then between the time of the passing of the resolution and Mr. Cresy's death, although he had brought up no design for the medal, the Board never took any steps to ascertain whether their resolution was being carried out by Mr. Cresy?—No, but that would have been probably my fault rather than that of the Committee if there was any fault.

3571. In this Appendix to the Report, "Return of Men who have displayed great merit in Saving Life from Fire," there is an extract from a report by Captain Shaw, dated the 26th May 1868; can you tell me why the whole of that report was not put there?—I prepared this return, and I inserted those paragraphs of Captain Shaw's report which appeared to refer directly to the subject.

3572. Will you read the report, if you have it there?—It is dated the 23rd May 1868. "With reference to the subject of Mr. Sampson Low's letter of the 13th instant" (he was the chairman of the Society for the Protection of Life from Fire), "I have to present the accompanying applications and reports concerning saving life. It will be in the recollection of the committee that on the 5th of October 1866, it was resolved: 'That in the opinion of the Board it is inexpedient to allow the men of the fire brigade to receive gratuities for services rendered in the discharge of their duty;' and after carefully examining the whole of the applications now brought forward, I can see no reason to recommend the Board to alter the resolution referred to. In the course of our business numerous cases arise in which men act meritoriously, and it may be worthy of consideration whether some badge or other distinction should be awarded to them on such occasions by their own employers, but even in exceptionally meritorious cases I should suppose that very little advantage could arise from allowing them to accept gratuities from a charitable society which is collecting money for the purpose over the same district which is now paying the Board in the form of a tax. I should strongly recommend that, before it is decided to make these reports to the society, the whole subject be referred to a sub-committee, who could examine witnesses and judge each case on its own merits, as I cannot at present recommend any of these applications, owing, in some cases, to the frivolous nature of the claims, and in others to the difficulty of obtaining satisfactory evidence. In conclusion, I ought to mention that the fire escape duty, though of a most harassing description, when considered with reference to the duration of the watches, and the particular time over which they extend, namely, from 7 p.m. to 7 a.m., is not in any way to be compared as regards risk, labour, or skill, with the ordinary fire duty, and that

that it will be most important to decide whether the less difficult duty should be allowed to constitute a claim from which the other is excluded."

3573. So that the paragraph with regard to the order of merit, or the badge of distinction, has been left out in the Appendix?—It was left out because the Return ordered by this Committee was a return of the gratuities granted to the men by the Board; and the object of the extract was to explain why no gratuities were granted.

3574. But does not that report show that, in Captain Shaw's opinion, no rewards given by a charitable society outside the Board would ever be preferable to a badge or reward given by the Board itself?—That was the opinion he then expressed.

3575. That was prior to instructions being given to the architect to prepare a badge?—It was.

3576. Can you tell me when the name of "superannuation fund" was altered to "savings fund"?—I cannot tell you the exact date, but I think it was in 1870.

3577. Why was it altered?—Because it was found that the term "superannuation fund" misled every one, and it was clearly a misnomer; there was no superannuation in it; 6 *d.* a week was deducted from each man's pay, and when he left he had it back: it was simply a savings fund, and it was thought that the alteration of the name would avoid any misconception, and enable everyone to know what the fund really was.

3578. Undoubtedly the name "superannuation fund" in your opinion, and in many people's opinion, would imply that its basis was superannuation?—It would appear to imply that.

3579. Was not it called a "superannuation fund" when the Board took over the brigade?—Yes.

3580. Therefore, the men were probably justified in supposing that that formed the basis of a superannuation fund?—I do not know how the firemen themselves could have been justified in supposing that, because the fund under the same name and with the same objects had been in existence for years before the Board took the old establishment over, and the men must have known previously what the fund was, and what it was for. The Board took over the men and took over the fund, and continued it under exactly the same name and conditions as before; and I think the correspondence between Captain Shaw and the Board prior to the brigade coming over, clearly shows what the nature of the fund was, and that the men understood what it was.

3581. This is altogether apart from the definite scheme, but do not you think that the men were justified in supposing that the superannuation fund was a fund upon which they were entitled to claim at some time or another a superannuation?—If the men thought that the superannuation fund afforded them some basis for superannuation under the Board, they must have thought the same thing under the old establishment of the fire insurance companies.

3582. Did they not?—Whether they did or not I do not know, but it was understood by the Board, and I believe it has been given in evidence before this Committee, that the managing committee of the fire insurance offices had no scheme of superannuation, but that the men were pensioned in case of need according to their respective merits, altogether without reference to this fund. If the honourable Member would like to have the date of the resolution altering the name of the fund, I have it now before me. The resolution seems to have been arrived at in April 1870, just upon the day when the committee were considering the question of giving a retiring allowance to one of the men specified in the list, Stephen Martin, who had a pension of 15 *s.* a week; I think at the time this pension was recommended some of the members of the Board, who were not upon the Fire Brigade Committee, thought that if there was a superannuation fund in existence for the men there would be no reason to grant this man 15 *s.* a week out of the general brigade funds; and I find that immediately after the case was considered the attention of the committee was called to the fact that the title "superannuation fund" did not clearly express the character and object of the fund, which was simply a savings fund, into which each man paid 6 *d.* a week, which he received back when he left; and it was resolved that in future it should be called the "firemen's savings fund."

3583. So that whatever might have been their misconception before that, in

Mr. *H. De la Hooke.*

22 May 1876.

consequence of the name, this resolution was passed in order that they should not be misled any further?—That was so.

3584. You stated, in answer to the honourable Chairman, that after the 28th February 1874, no fresh application for a superannuation scheme was made by the men. The honourable Chairman asked whether this was not so in November 1874, and whether Captain Shaw did not submit this application to the Board, and you sad, "I do not think it was"?—I did say so.

3585. Have you any note of the reception of that petition (*handing a Paper to the Witness*)?—No, I have no note of that; I remember Captain Shaw mentioning to the Committee on one or two occasions that the men were anxious about this fund, and wished to know what was being done.

3586. Have you a note of the meeting of the 9th November 1875?—I have the minutes of the meeting, but no note of any mention of the superannuation question; Captain Shaw probably mentioned that petition which he had received from the men in an informal way, and there was no minute made of it.

3587. Did Captain Shaw read it?—I do not remember Captain Shaw reading it; I will not say that he did not, but if so, it was done not as part of the proceedings of the committee, but in an informal way; probably the chairman of the committee, having explained to Captain Shaw the position in which the matter stood, the men's petition was taken back by Captain Shaw.

3588. I will read you the memorandum made by Captain Shaw on the back of the petition, which was read to the Fire Brigade Committee. It is dated the 9th of November 1875: "The committee desire me to reply that the case is put down for special hearing at a fixed hour on the 22nd instant, before the Works and General Purposes Committee"?—That is correct.

3589. And this is the petition upon the question of pensions and superannuation?—Yes.

3590. So that you were hardly correct in saying that after the 28th of February 1874 no fresh application was made?—I do not think I was incorrect in saying that, because this Paper to which you are referring was not an application which was laid before the Board or the committee. I do not consider that that petition was laid officially before the committee, because you have the original document in your hands; whereas, if it had been laid before the committee I should have it with the Fire Brigade Committee papers, so that I think probably the representation was made in an informal way, and that Captain Shaw was told that the question was under the consideration of a sub-committee, and that he took the document back.

3591. After that, on the 27th of January 1875, a scheme called Mr Thompson's scheme, was drawn out, but not adopted by the committee?—That was so.

3592. What was done with it; did the committee approve or disapprove of it?—The committee did neither. Mr. Thompson laid it before the sub-committee as embodying the views he held at the time, and the sub-committee asked Captain Shaw to report upon it.

3593. This was forwarded to the men, headed "Metropolitan Board of Works," and it was not adopted by the committee, although it was sent to the men with that heading upon it?—It was not adopted by the committee; it was handed to Captain Shaw, and he laid it before the men, I believe.

3594. Was this printed?—It was not printed.

3595. Was it lithographed?—A few copies were lithographed for the consideration of the members.

3596. Did the Board's lithographer lithograph it?—Yes, that was done for the convenience of the members of the committee, in order that each member might have a copy and see what Mr. Thompson's suggestions were.

3597. Still, although that was laid before the men by the committee, it was the scheme of a private individual?—It was not a scheme of the Board certainly.

3598. Was it ever referred to the accountant of the Board?—The subject was referred to him, and Mr. Thompson's scheme was referred to him too.

3599. By the Board?—By this sub-committee.

3600. Did he approve or disapprove of it?—The accountant was not called upon to express approval or disapproval; he had simply to report facts and calculations to the committee.

3601. What was it put before him for?—It was put before him in order that he might make calculations upon it, and tell the committee what the effect of it would be.

3602. *Chairman.*]

3602. *Chairman.*] Was that before it was handed to Captain Shaw to communicate to the men?—No, it was referred to the accountant at the same time that it was handed to Captain Shaw, and the accountant was to report to the sub-committee.

3603. Have you his report there?—Yes.

3604. He draws in that report, I believe, comparisons between the metropolitan police and the City police superannuation scheme and that scheme?—Yes, he does.

3605. Mr. *Ritchie.*] Does he wind up with this paragraph, "Supposing there were eventually a pension list of one-eighth of the brigade, or 50 men, *i.e.*, two superintendents, 16 first-class engineers, 16 second engineers, 16 first firemen, and the pensions amounted to five-eighths of effective pay, and all the men contributed 2½ per cent., the net charge would be 2,365 *l.*, but this charge would not probably arise for some years"?—That is his statement.

3606. Will you hand in that report?—I will. (*The same was handed in.*)

3607. Would you not look upon that as, to some extent, the basis upon which he thought the superannuation fund was calculated?—No, I should not.

3608. That it was simply his own opinion?—I do not think he expresses any opinion with reference to what the rate of pensions should be. He simply inquires what the scale is in a number of different forces, the metropolitan police, the city police, and others. He tabulates them all, and brings them up to the committee, showing what would be the cost, and what would probably be the result of each scheme.

3609. Mr. Thompson's scheme was simply laid before him for his report?—He was instructed to bring up any proposal which, after due inquiry, he thought it desirable to submit.

3610. *Chairman.*] It was referred to him as the accountant first to examine Mr. Thompson's scheme, and then to suggest a scheme?—Not to suggest any distinct scheme.

3611. Mr. *Ritchie.*] As I take it, the basis of the scheme which he thought it desirable to suggest is that which is explained in the last paragraph of the report?—I do not know that you can go quite so far as to say that that is what he thought was desirable. That is a calculation which he makes.

3612. After that scheme was rejected nothing was done until the year 1876?—I cannot say that nothing was done.

3613. At any rate no scheme was prepared?—No scheme was adopted by the Board until March 1876.

3614. In this scheme adopted by the Board, the Board proposed to contribute, not this 2,365 *l.* as put down in this report by the accountant, but 500 *l.*?—The Board resolved to contribute 500 *l.* a year, and that 500 *l.* a year would go on accumulating for many years before it would be required to meet the claims for pensions which would arise eventually. You can hardly compare the 500 *l.* with the 2,365 *l.*

3615. Why not?—Because the accountant says that 2,365 *l.* would be the charge after a great number of years; that is upon the supposition that there would be no annual contribution by the Board during the interval; but the Board resolved to begin at once, and to set apart 500 *l.* a year for the purpose.

3616. You read this as meaning that this 2,365 *l.* would probably not arise for some years?—Not for many years.

3617. Have you Return No. 3 in your hand showing the cases of men who have broken down in the service of the Metropolitan Fire Brigade, &c.?—Yes.

3618. Are you aware of the existence of a previous return, dated 15th June 1874?—I am.

3619. Did you have that before you when you prepared this one?—I had.

3620. Is this one supposed to be a copy, as far as it goes, of that one?—It is not supposed to be a copy of it at all, because that return which you have there was prepared by Captain Shaw; this was prepared by me from the Board's records.

3621. But were not you in the room when this was first, on the examination of Captain Shaw, produced by me as being the Return of the Board, and he said that it was not made up to this time, and therefore a resolution was passed that it should be made up to this time?—I remember an allusion to the Return, but not a resolution such as you suggest.

 3622. In

Mr. *H. De la Hooke.* 22 May 1876.

3622. In point of fact there are very essential differences in those two Returns, are there not?—There may be, but this Return was prepared as closely as possible in the terms of the order transmitted from this Select Committee to the Board.

3623. But I think it was quite understood that what we wanted was a continuation of this previous return up to the present date?—What I understood the Committee to require was what was specified in the order, the terms of which are stated at the head of the return, and it was specified very fully and completely, as I thought. I do not know anything that is not in the return.

3624. There is a column for remarks in both cases, and the remarks in the original one for 1874 appear to be totally different from the remarks for 1876; may I ask whose remarks they are in 1876?—Certainly; I put in those remarks.

3625. But there were remarks in the previous one which are entirely omitted?—That is so.

3626. Was there not in the original also a column for those who were disabled by accident, occurring in the discharge of their duties, and those who were discharged for ill health, caused by their occupation?—I put a column showing the nature of the infirmity. Surely the nature of the infirmity sufficiently indicates whether it was a disablement by accident or by ordinary illness.

3627. I do not think it does at all; supposing a man dies from consumption, it does not follow that he dies from injuries received in the discharge of his duties?—No, it would rather follow that he did not die from injuries received in the discharge of his duties.

3628. I find in the original Return; John Hall died from consumption; he comes under the column, "Caused by their Occupation;" Robert Humphries died of consumption, and comes under the column, "Caused by Occupation"?—But the Committee called for this return from the Board, and the Board has nothing before it to show that the consumption was caused by the man's occupation.

3629. You had this return before you; this was the official Return?—That Return was made by Captain Shaw to a committee of the Board.

3630. And this has been before the Board?—Yes; but I had to refer to the original documents while preparing this. The Return is based upon the reports made to the Board in each case.

3631. I understand you to say that you referred also to this report?—I had it before me.

3632. Did not you think it was important to this Committee to know whether these men who left the service, or who were discharged, were discharged or left the service in consequence of illness caused by their occupation?—I thought it essential to prepare the return as nearly as possible in accordance with the terms of the order made by this Committee.

3633. And, having this before you with that information, you did not think it necessary to embody it in the return which was, practically, to bring this one up to the present date?—I followed the terms of the order as nearly as possible.

3634. Now the first man I find upon your return is John Taylor, fourth-class fireman, and your remark is to the following effect: "This young man fell from the fire-escape whilst learning the drill; he left no one dependent upon him." Do you think that accurately represents the circumstances of the case?—I think it does.

3635. He fell from the fire-escape. Did the fire-escape break?—I think it did.

3636. But do you not think that a fall from a fire-escape means rather that he fell from letting go, or something of that sort?—I should have thought that the words would have covered a fall of any kind.

3637. You say he left no one dependent upon him. Is it not the fact that his father and mother were partially dependent upon him?—I do not know that they were.

3638. Did they make any application to the Board?—I believe the man's father applied, but I do not think he made it clear that he was at all dependent upon his son.

3639. However the father did apply?—The father did apply.

3640. And the application was refused?—Yes.

Thursday, 25th May 1876.

MEMBERS PRESENT:

Mr. Clifton.	Sir Andrew Lusk.
Mr. Hankey.	Mr. M'Lagan.
Mr. Hardcastle.	Sir Henry Peek.
Mr. John Stewart Hardy.	Mr. Ritchie.
Mr. Herbert.	Mr. Stevenson.
Sir James Hogg.	

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

Mr. *Harry De la Hooke*, called in; and further Examined.

Mr. *H. De la Hooke.*

25 May 1876.

3641. *Chairman.*] Do you wish to explain any of the questions which were asked at the last meeting?—No, I do not.

3642. Mr. *Ritchie.*] I wish to ask you one or two questions with regard to some evidence which you gave at the last sitting of the Committee. There were some questions asked you with regard to the superannuation which the Board's other servants receive; do they contribute towards their superannuation fund?—They do not.

3643. The superannuation is paid entirely from the funds of the Board?—Entirely.

3644. And they contribute nothing at all?—Nothing at all.

3645. You stated that the Waterloo-road station was closed and opened again; in answer to Question 3497, you say that the Waterloo-road station was closed, but has since been re-opened?—Yes.

3646. You say in the next answer that it was opened again in the middle of last year, having been closed in 1872, and at Question No. 3500 you were asked, "What was done with the building in the interval?" to which you reply, "The premises were adapted for workshops for the fire brigade, and being opened as workshops, it was found that if the men worked there an engine might be placed there, and it might be utilised for attending fires in the immediate neighbourhood"; that answer seems rather to imply that the premises, immediately they were closed, were opened as workshops; was that so?—No; that answer might imply what you say, but as a matter of fact, the premises were only opened last year as workshops. In the interval nothing was done with them; there was an endeavour to let the premises, but when a difficulty was experienced in finding a more suitable place for permanent workshops, the Board determined to place them in the Waterloo-road. It took a long time to adapt the building for that purpose, but about the middle of last year the work was completed and the workshops opened.

3647. Should I be correct in saying that, from the 4th of May 1872 to the 1st of November 1875, those premises were totally closed?—I am not certain of the exact dates, but it would be about that.

3648. And that a policeman was put in charge to take care of them?—That was so.

3649. And that the station was again finally re-opened as a station in April this year?—Yes; the station was re-opened in April this year, and an engine was placed there with horses.

Mr. *H. De la Hooke.* 25 May 1876.

3650. So that, notwithstanding Captain Shaw's objection to the station being closed, it was closed, and used for nothing else at all from the date of its being closed until November 1875?—That is the case.

3651. And during that interval there was a policeman paid to take charge of the premises?—There was.

3652. At Question 3514 the honourable chairman of the Metropolitan Board of Works asked you this: "The anticipated danger," that is, the danger anticipated by Captain Shaw in closing the Sloane-square station, "has never arisen"; to which you replied, "I believe there has been no evil result." You were asked that question rather hurriedly, and I wish to ask you, before going into the question, whether you see any reason to change your opinion in reference to that answer, that no evil result had happened in consequence of the closing of the Sloane-square station?—No, I do not see any reason to correct that answer; of course I am not speaking with certainty upon the point at all; I say I believe there has been no evil result; that is to say, that the attention of the Board has not been called to any fire in that neighbourhood which could have been extinguished earlier if the engine station had remained in Sloane-square; that is what I meant by my answer.

3653. What is the nearest station to Sloane-square after that station was closed?—The station in South Parade, Chelsea.

3654. Was the Westminster station not as near as that?—No, I think the Chelsea station is nearer to Sloane-square; but I am not certain about that. The difference between one and the other as regards distance from Sloane-square cannot be very great, I think; but the South Parade, Chelsea, station is the one that was regarded rather as covering the territory which was supposed to be protected by the Sloane-square station.

3655. Is there within your memory a fire, which took place in 22, Pavilion-road, Sloane-street, Chelsea, in a corndealer's house, where a house of 11 rooms and its contents were burnt up to the roof, and several people were burnt to death?—No, I do not remember that.

3656. Would there be no record on the minutes of the Board of any fire in which so large a number of deaths as that occurred?—We should have a report of the deaths. I could refer to it if you would give me the date.

3657. The fire occurred on the 26th March 1871?—I ought to say that the fire-escape which was attached to Sloane-square was not removed; that remained.

3658. *Chairman.*]. It was at that escape, was it not, that the curricle engine was stationed?—Yes, so that as regards death by fire the protection was hardly diminished in any way.

3659. Mr. *Ritchie.*] But I presume that when a fire gets any very great hold of a house even the fire-escape may be of very little use sometimes?—The fire-escape is generally summoned first, I think. I have now before me the record of that fire.

3660. Do you know the distance that was from the old station in Draycott-place?—No, I do not.

3661. Have you any map which shows it at all?—No.

3662. You do not know from your own personal knowledge?—No, I do not know the locality well.

3663. How many people were burnt to death?—Five people.

3664. There were a great many persons in the house at the time; is that stated in your minute?—No, this report does not state that.

3665. Whose report is that which you have before you?—What I have before me are the minutes of the meeting of the Fire Brigade Committee of the 4th of April, in which there is a minute of the presentation by Captain Shaw of a report on the death by fire of Mary, Alfred, Arthur, Frederick, and Cranfield Wilson, at 22, Pavilion-road, Chelsea, on the 26th March 1871. Then I have a short report by the Board's solicitor stating that he had attended the inquest, and giving the result.

3666. Have you Captain Shaw's report here?—No, I have not the report itself here.

3667. If there had been any special recommendation or any special memorandum in Captain Shaw's report, would it have appeared there?—There would have been a mention of it here.

3668. Or if Captain Shaw had given any reason why those deaths had taken place and whether they could have been prevented or anything of that kind, would that have appeared?—Yes, there would have been special mention of it.

3669. Then upon the 4th of April 1873, there was a large fire at the Floor Cloth Manufactory in King's-road, Chelsea?—Yes, I remember that.

3670. Do you remember how far that was from the old station in Draycott-place?—I cannot tell the distance.

3671. Do you know that locality?—I cannot say that I know it well enough to speak of the distances.

3672. You could not say whether it was 200 or 300 yards from the old fire-escape?—I could not say that.

3673. Are you prepared to say that it was very much further from the nearest existing station than it would have been if the Sloane-square station had been in existence?—I think the Sloane-square station might have been rather nearer in that case.

3674. Of course you remember the great fire at the Pantechnicon?—I do.

3675. That was not very far from the old station in Draycott-place, was it?—It was not a great distance.

3676. Do you think I should be correct in saying that it was about 800 yards, and that the nearest existing station at that time was 1,900 yards?—I daresay those would be the distances. I cannot speak with certainty upon the point.

3677. Have you any report showing whether or not the engines were long in arriving at that fire at the Pantechnicon which took place on the 13th of February 1874?—I do not suppose there is any report of that kind; unless some complaint is made by persons in the neighbourhood, or present at the fire, that the engines are long in arriving, there is no report made to the Board of the time they do arrive. Captain Shaw has a record of all those things.

3678. Have you Captain Shaw's report of that fire at the Pantechnicon?—No, I have not. We have a daily printed report of fires, the same as is sent to the fire insurance offices, but that would not contain any of the particulars you are asking for now with reference to the time of the arrival of the engines.

3679. When a large fire takes place like that, with the loss of an immense deal of property, would no question arise at the next meeting of the Board in regard to the means which had been taken to extinguish that fire, and as to the arrival of the engines and otherwise, and as to what had been done with a view to the saving of as much property as possible?—No; the Board relies upon every exertion being made by the brigade upon every occasion, and unless attention is drawn to some particular circumstance connected with the fire, it does not form a subject of special inquiry.

3680. And that special circumstance is called attention to by people outside the brigade altogether, is it not, by their calling attention to the non-arrival or the late arrival of the engines?—Not only by people outside, but Captain Shaw or any member of the Board might call attention to any special circumstance.

3681. Do you know, of your own personal knowledge, any circumstances connected with that fire, such as what engine it was that arrived first at the fire?—I cannot say that I know that.

3682. Do you know what engine station got the alarm of the fire first?—No, I do not know.

3683. Have you heard that a volunteer engine was the first to arrive at the fire?—I think, now you mention the circumstance, that I remember hearing so at the time.

3684. And that being so, it follows, as a matter of course, does it not, that it was a volunteer engine that got the first intimation?—Yes, I suppose that would be so.

3685. And did you hear that when that engine did arrive it was utterly inefficient, in consequence of the want of hose; or that for some similar reason they could not set to work at the fire immediately upon arrival?—I cannot remember that.

3686. Is there no report made by Captain Shaw to the Board at the time when

Mr. *H. De la Hooke.* 25 May 1876.

when a large fire takes place, or is the report of it simply included amongst a number of other reports in the annual or periodical return?—There is a daily return made of every fire which has taken place on the previous day. That is made in accordance with the Act of Parliament, which requires that all the insurance offices shall be informed upon the morning following of all the fires which have occurred, and Captain Shaw states in that report certain particulars.

3687. I suppose one object of that is that the insurance companies being very much interested in the saving of as much property as possible may have at once the facts, in case they desire to place any representation before the Board as to the manner in which the brigade has acted during that particular fire?—It never occurred to me that that was the object.; I never heard that it was.

3688. Do you know what the object is of sending those reports to insurance offices?—The Act of Parliament requires it, and I should think that the object was that every insurance company might be informed as early as possible of the property which was insured in their office which had been destroyed or damaged by the fire.

3689. The report, I think, does not enter into any particulars; it simply states where the fire was, and what the effect of the fire was; does it state anything beyond that?—Yes; the report states the time of the fire, the premises destroyed, whether it was a large fire or not, the supposed cause, the extent of the damage, and the insurance office which insured the property, and also whether any life was lost.

3690. I may take it that it is not the habit of the Board specially to consider the circumstances under which any great fire took place, with the view of seeing whether it has been coped with in a proper and efficient manner?—No; the Board does not inquire into those cases specially unless some circumstances are brought before it which appear to call for some inquiry; but Captain Shaw, I apprehend, would call attention to anything of that kind himself.

3691. You do not think the great extent of a fire is one of those circumstances which the Board would consider required them to take the whole matter into consideration?—Not the extent of it alone, unless their attention was called to something else.

3692. Did you ever hear that there was any deficiency in men at the Pantechnicon fire?—No, I cannot say that I have.

3693. I think when we left off your examination on the last occasion, you were going to read the application for compensation which was made by the parents of this man, John Taylor, who was killed?—Yes, I will read it. It is as follows:—"To the Gentlemen of the Metropolitan Board of Works.—The Humble Petition of John William Taylor, of No. 5, Pope's Hill, Shoreditch, showeth that your petitioner is the father of John Joseph Taylor, the fireman belonging to the Metropolitan Fire Brigade, who died in St. Bartholomew's Hospital on Friday, 11th September, from injuries received through the breaking of the fire-escape ladder on Friday, 4th September, while testing the same on Doctors' Commons (whereby I have lost a good son), who was the partial support of myself, wife, and four children, which through ill health and slackness of trade as a waterman I am unable wholly to support, and therefore I throw myself on the bounty of the gentlemen of the Board, hoping that you will consider mine a case worthy of your support, and award me what help you may consider necessary for the loss of my son, which I can assure you gentlemen is a heavy loss to me; and for such help your petitioner will ever feel most grateful."

3694. What answer was given to that?—The answer was as follows:—"6th October 1868. Sir,—The Fire Brigade Committee of the Board have considered your petition requesting that some compensation may be granted to you for the loss of your son, whose death was occasioned by the injuries he received through the breaking of a fire-escape ladder while being tested. Captain Shaw has informed the committee that he paid you the sum of 5 *l.* towards the expenses of your son's burial, and they have directed me to state that they are unable to entertain your request for further compensation.—I am, &c., *John Pollard.*"

3695. That 5 *l.* was the usual sum, was it not?—Yes.

3696. Is that all the correspondence upon that point?—There was a further letter from the father, dated 8th October:—"Gentlemen, with every mark of respect,

Mr. *H. De la Hooke.*
25 May 1876.

respect, I beg to reply to your letter, dated 6th October (which has much surprised me), concerning the death of my son, John Joseph Taylor, who was unfortunately killed by the breaking of a testing fire-escape ladder (the full particulars of which you are acquainted) by the fault and negligence of one of your servants in the brigade disobeying your printed orders in allowing six men to be on the said ladder at one time, instead of two, he using his own discretion instead of obeying orders, whereby my said son lost his life. My son was a very great support to me and his ailing mother; the loss we sadly deplore. It is true Captain Shaw gave me 5 *l.* towards the funeral. But at that time I was informed that was a general rule towards the funeral of any man that died in the brigade, and not as any compensation, and such I took it. Then I was unable to follow my employ for three weeks, and now am ill; also his mother has suffered much by the sudden shock, and the many expenses has completely beggared me and my family. I, therefore, humbly hope and trust that your committee will be pleased to grant to your memorialist some adequate compensation for so heavy a loss he has sustained.—Respectfully waiting your reply, Gentlemen, I beg, &c., *J. W. Taylor.*"

3697. Was there any reply to that?—The reply to that was dated 14th October: "Sir,—I laid your further letter relative to the payment to you of compensation for the loss of your son, whose death was caused by an accident while testing a fire-escape, before the Fire Brigade Committee, and they directed me to inform you that they cannot depart from the decision already communicated to you.—I am, &c., *John Pollard.*"

3698. Nothing was done upon that. He did not get anything?—Nothing was given.

3699. Do you still think that this remark you have put in, "He left no one dependent upon him," is a full statement of the case with regard to that man?—I think it was understood at the time that Taylor's father and mother were not really dependent upon him. He had been only one month in the brigade, and it was considered that out of his pay as a fourth-class fireman, which I think the men generally said was only just enough for themselves, he could hardly have been able to contribute much to the benefit of the family; and also I should say that Captain Shaw, who generally calls attention in his reports upon the death of a fireman to the members of the family who are dependent upon the deceased man, did not make any recommendation in this case.

3700. Have you the minutes of the committee by whom the matter was considered?—I have the minutes of the committee. I will read first the report of Captain Shaw upon the accident: "Chief Station, Watling-street, 23rd September 1868. I have to report that, on the 4th instant, the following serious accident occurred at the testing of some new fire-escapes recently made for the Board. The fly-ladder and first-floor ladder of one of the machines having been first tested separately and found all right, were undergoing the next part of the inspection, in which they had to be tested together, and during the process the fly-ladder broke, throwing all the men who were on both ladders to the ground, and seriously injuring two. One of those men, John Taylor, afterwards died in St. Bartholomew's Hospital, and the other man, although still in the hospital, is rapidly approaching complete recovery. An inquest was held on the 22nd instant, and the following verdict returned, namely, 'Accidental death.' The jury think that the persons testing the machine should know beforehand the power to which the machine should be tested. The investigation was an unusually long one, and the coroner's jury went into all the facts with the witnesses on oath." Then he goes on to say, "I also append the following papers, namely, the statement of the drill instructor who was in charge of the ladder in question; the statement of the officers on duty who had general charge of the inspection; and a petition from John William Taylor, the father of the deceased, asking for some compensation for the loss of his son. (Signed) *Eyre M. Shaw.*" Then I have a resolution, "That Captain Shaw do issue instructions to the men in charge of the fire-escapes strictly cautioning them not to allow more than a certain number of men to go on the escapes at the same time." Then there is a report by Captain Shaw dated the 24th instant, stating that, in accordance with the resolution of the Board of the 5th instant, he had paid to the father of John Taylor 5 *l.* towards the expenses of his burial; and then a resolution that Mr. Taylor be informed that the

Mr. *H. De la Hooke.* 25 May 1876.

the committee cannot entertain his claim for compensation for the loss of his son;" so that it would appear, from the way in which this is put in Captain Shaw's report, that he himself did not attach much importance to the statement of the father of Taylor that he was dependent upon his son, because when Captain Shaw knows that persons are dependent upon firemen who have died he always states the fact distinctly in his report.

3701. I do not suppose anyone would say that a whole family was absolutely dependent upon a man who was earning only the small wages that Taylor was doing, but the question is, whether it was a matter of course for the Board to exercise their discretion in the matter. I gather from you that they exercised their discretion, taking all the circumstances into consideration, and notwithstanding the representations made by Taylor's father, they declined to give anything to him; that was the way that that case was disposed of?—Yes.

3702. Now, the second case in your list is Ford's case, in which it is stated that "Ford's widow would have received a permanent annuity or pension from the Board"; was there any resolution carried, or have you any minute to show that the Board ever contemplated giving her a pension?—Yes, I have.

3703. What date have you there?—I have here the Board minutes of the 13th of October 1871.

3704. Will you read anything which took place at the Board with regard to Ford's case?—The report of the Fire Brigade Committee made to the Board on the 13th October 1871, says: "It is with sincere regret that your committee have to report the death of Joseph A. Ford, second-class fireman, in consequence of injuries received at the fire in Gray's-inn-road, on Saturday last, at which he saved the lives of five persons. Your committee have received the following report from the chief officer, detailing the circumstances under which this lamentable event occurred." Then follows Captain Shaw's report. "Your committee feel that they can add but little to the foregoing report. They must, however, express their admiration of Ford's heroic action, and their deep regret that his noble conduct entailed the sacrifice of his own life. In him the Board appear to have lost a valuable servant, and the public a courageous protector; and the record of his good qualities, as described by the chief officer, only serves to render more apparent the loss which has been sustained. He has left behind him a bright example of self-sacrificing devotion to duty, and his memory will doubtless long be cherished by his officers and comrades in the brigade. Your committee have considered what provision should be made for his widow and two little children, and have referred to the resolution passed by the Board at the time of the original constitution of the brigade, in view of the possible occurrence of such events. This resolution, passed on the 24th of November 1865, is in the following terms: 'That in the case of an officer or fireman being killed in the discharge of his duty, his widow be provided for by an annuity which shall continue during the pleasure of the Board.' Happily this is the first occasion since the brigade has been under the jurisdiction of the Board, a period of nearly six years, in which a fireman has lost his life in the discharge of his duty, and in which it has been necessary to act upon this resolution. Upon careful consideration it appears to your committee that it will be better at the present time not to determine finally what provision shall be made for the widow, but to make her an allowance for the next six months, and then to consider her circumstances and requirements more fully, with a view to determine what further provision should be made. Should this course meet with the approval of the Board, your committee would recommend that for the next six months an allowance of 1 *l.* a week be made to the widow. It may be mentioned that Ford being in the second class of fireman, was in receipt of 4 *s.* a day, or 28 *s.* a week. At the end of the six months your committee will re-consider the matter with a view to determine what further provision they should recommend the Board to make. With reference to the funeral of the deceased fireman, there is a general order of the Board under which 5 *l.* is granted to meet the funeral expenses of any fireman who dies in the service. In the present instance it is probable that an expenditure somewhat in excess of this amount may be incurred, and your committee have felt themselves justified under the exceptional circumstances in authorising such an expenditure as may be necessary to render due honour to the deceased." Then I have the resolution of the Board, "Resolved unanimously, on the motion of Mr. Freeman,

Mr. *H. De la Hooke.*
25 May 1876.

Freeman, that the Board entirely concur in the opinions expressed by the committee as to the noble and heroic conduct of Joseph Andrew Ford, in saving the lives of five persons at the recent fire in Gray's Inn-road, at the sacrifice of his own life; that the Board desire to place on record their admiration of his heroism and devotion to duty, their sense of the loss which themselves and the public have sustained by his death, and their sympathy with his widow and bereaved family." Then there is a motion to adopt the report of the committee, "That for the present an allowance of 1 *l.* per week be made." And then there is an amendment moved by a member, "That for the present an allowance of 1 *l.* 8 *s.* per week be made to the widow of Joseph Andrew Ford, and that it be referred to the Fire Brigade Committee to consider and report what permanent or other provision should be made for her." The amendment was not carried, but the motion was.

3705. So that there was no permanent arrangement made at that time?—No permanent provision was made, but it was the full intention to do so.

3706. Do you know why there was no permanent arrangement made?—Because the committee met only a day or two after the man died, and, not knowing all the widow's circumstances at that time, the committee thought it would be better to give her 1 *l.* a week for six months, and in the meantime to consider the matter more fully.

3707. It was not even referred to a committee to consider the permanent compensation, was it?—Yes, it was, or rather I should say that no reference was required, because the committee said, We will make an allowance of 1 *l.* a week for six months, and at the end of that time consider what further provision should be made. The committee's report was adopted by the Board.

3708. In the meantime the public had subscribed for the benefit of the widow, and it was not thought necessary to do anything more?—The 1 *l.* per week was continued at the end of the six months for another six months, and it was found that the widow then had an income exceeding what her husband's pay was when living.

3709. It is evident that there was no definite permanent arrangement under consideration?—There was no definite permanent allowance under consideration.

3710. Now the next man is Stanley M. Guernsey, and this is the last of those who were killed; do you remember the circumstances of that man's death?—He was killed at the City Flour Mills fire, I believe.

3711. Have you Captain Shaw's report to the committee upon his death?—Yes, I have.

3712. Will you read that?—This report is dated the 11th November 1872, made to the Fire Brigade Committee on the 12thNovember: "I have to report that at a fire which took place at the City Flour Mills in Upper Thames-street on the 10th instant, several floors in the centre of the building suddenly fell, and that the men who were at work inside were with some difficulty rescued, with the exception of No. 221, third-class fireman, Stanley Montague Guernsey, who is still missing. Every effort was of course made to find him, but owing to the enormous bulk of materials which had fallen, the attempt was from the first utterly hopeless, and I fear there can be no reasonable doubt that his body is now lying in the ruins. Owing to the exceedingly unsafe condition of the walls and floors, and the enormous weight of stock on the premises, no attempt can yet be made to search for the body; but the moment the walls have been shored up, I propose to commence. Guernsey joined the brigade on the 26th of August 1868, and was advanced to the rank of a third-class fireman on the 26th of May 1871, and was getting on very well in the service."

3713. I think that Captain Shaw makes another report on 22nd November, does he not?—Yes, he does. It is as follows: "I have to report that the funeral expenses of the late third-class fireman, Stanley Montague Guernsey, are 1 *l.* 18 *s.* 6 *d.* in excess of the usual amount allowed by the Board, but I trust that under the exceptional circumstances of the case, the additional expenditure will meet with the approval of the committee. I append the bill for the expenses." That amount was paid.

3714 But there is another report still, on 22nd November, is there not, bringing before the Board the verdict of the coroner's jury?—I have the minute of the Board stating that "the committee considered the letter from Mr. W. J. Payne, coroner

Mr. *H. De la Hooke.*

25 May 1876

coroner of the City of London, forwarding a copy of the verdict of the jury at the inquest on the body of Stanley Montague Guernsey, a fireman killed at the fire in Upper Thames-street. The chief officer handed in another copy of the verdict, with the addenda made to it by the jury, bearing the signature of the foreman. The chief officer stated in reply to a question that the deceased fireman was not married, and that as far as he was aware none of his family were dependent upon him for support.

3715. But you have not got Captain Shaw's report commencing: "I have to report that the following verdict was returned yesterday by the jury"?—No, I have not that report (*a copy being handed to the Witness*). This is simply the verdict, headed by these words: "I have to report that the following verdict was returned," and so on.

3716. Will you be so good as to read the verdict, and the recommendation of the jury: "That the deceased Stanley Montague Guernsey came by his death within the walls of Messrs. Hadley's flour mills, Upper Thames-street, whilst in the performance of his duty assisting to extinguish a fire which had raged therein for several hours, by the falling in of a large portion of the building, but how such fire originated there is not sufficient evidence to show; and the jury wish to draw the attention of the Board of Works to the fact that the deceased lost his life in the performance of his public duty. That a copy of this verdict be forwarded to the Metropolitan Board of Works with the expression of the jury that it is a case particularly deserving the consideration of the Board in respect of awarding to the family or relatives of the deceased a consideration for the loss of a valuable life sacrificed in the discharge of an onerous public duty. The jury through the coroner complimented the brigade on their behaviour at the fire;" that is signed by Captain Shaw.

3717. Have you the addenda?—I have. "After stating the verdict, the coroner said, It is the unanimous opinion and request of the whole of the gentlemen of the jury that the members of the Metropolitan Board of Works and the public in general should know that under such trying and in fact almost insurmountable circumstances as attended the late fire in Upper Thames-street, the gallant captain and his brave officers and firemen were enabled to stand at their posts performing their arduous duties in the cool, deliberate, and at the same time determined manner that they did, more especially at a fire lasting so many hours, and when all were exposed to such imminent danger. They (the jury) therefore wished the Board of Works and the whole of the public to know that they had the greatest confidence in the skill and knowledge of Captain Shaw and also his officers and men under such trying circumstances. They believed that every precaution was taken by him (Captain Shaw) to protect his men, and that the unfortunate deceased only entered the building with him and other comrades when he met with his untimely death. The Captain and the others must therefore have equally exposed themselves to similar danger. They therefore considered it their duty to let the Board know, from what they had heard in evidence, and from what they had personally witnessed, that it had inspired them with confidence upon their general tact in dealing with such an enemy as fire, that there were officers ready to do all for the protection of the public at large who might at any time be similarly endangered."

3718. After that did any relative of Guernsey's make an application to the Board?—Yes, there was an application upon the 25th of November from W. Guernsey. "Gentlemen,—I beg to ask your honourable Board to take into consideration the melancholy loss which I have sustained in the death of my son, Stanley Montague, at the recent calamitous fire in Upper Thames-street; and if you can make any compensation to me on this account it will be very acceptable under the sad circumstances. With thanks for the honourable mention you have already made of my son's services."

3719. And notwithstanding the recommendation of the jury, and notwithstanding that application by Guernsey, nothing was granted by the Board?—No. Inquiry was made into the father's circumstances to ascertain whether he was dependent upon his son, and it was found that he was not so.

3720. And notwithstanding this brave and gallant conduct which was directed by the jury to be communicated to the Board, and notwithstanding that his father did make an application stating that he was to some extent dependent upon him——?—I do not think he says that; he simply says that he has sustained

tained a melancholy loss in the death of his son; "if you can make any compensation to me on this account it will be very acceptable."

3721. He asks for compensation, and notwithstanding the recommendation and the verdict of the jury, nothing was given him?—Nothing was given him.

3722. Have you got the answer to Guernsey's application?—I have not the answer itself, but I have the resolution; the application was not granted. Special inquiry was made; the clerk of the Board went and saw the father, and took every pains to ascertain whether he was dependent upon his son.

3723. Have you anything to show that Captain Shaw made any inquiries in this case?—I have only that which I read from the minutes, that so far as he could ascertain there was no one dependent upon him.

3724. Sir *James Hogg.*] A further inquiry was made by the clerk afterwards, was there not?—Yes, by the clerk of the Board.

3725. He reported to the same effect, did he not?—Yes.

3726. Mr. *Ritchie.*] The Board did not consider it a case in which they should give anything?—No.

3727. Now going down this return I see at the foot the following note: "In addition to the allowance above stated 5 *l.* was in each case allowed under a standing order of the Board for funeral expenses;" I think you mentioned that in one of your answers upon a previous day?—I believe so.

3728. Your answer almost led me to suppose that this was something which did not take place under the old system, but there was an amount given under the old insurance companies, was there not?—I do not know at all whether that was so or not, but I am not aware that there was anything in my answer to lead to the assumption that nothing was given in such cases by the insurance companies.

3729. Do you not know that an amount was given under the old fire insurance companies?—I do not know.

3730. Have you the resolution of the Board when it was agreed that this 5 *l.* should be given in the first case?—I have; it is dated 5th of October 1866: "That in the event of a man belonging to the fire brigade dying while in the service of the Board, the sum of 5 *l.* be given to his widow or family towards the expense of his burial."

3731. There is nothing in that to show whether anything similar was done under the old system?—No; the resolution is preceded by a short report which says that, "from information laid before your committee, it appears that a somewhat similar practice is observed with regard to men in the police, and your committee think it desirable that some rule should be laid down with regard to the fire brigade;" there is no mention of what was the practice under the old establishment.

3732. And it is not within your knowledge what was the practice under the old establishment?— No, it is not.

3733. If you do not know that anything was done, you do not know, of course, that 10 *l.* was given?—No, I do not, of course.

3734. Among the remarks which are put down in this return with regard to third-class fireman George Ray, whose leg was amputated, you say, "the injury which necessitated the amputation was not caused by his duty"?—That is so.

3735. Did you not hear Captain Shaw give his evidence?—Yes, I heard him give his evidence.

3736. Did you hear him say that the man was on duty at the time?—I cannot say that I remember what Captain Shaw said upon this case particularly. I have all the facts with reference to the case if the Committee would like to have them.

3737. You are not aware that Captain Shaw said here, in answer to a question, that he was distinctly on duty?—I cannot say that I remember exactly what Captain Shaw said on this particular case.

3738. Have you any report of Captain Shaw's with reference to this accident?—I have.

3739. Will you kindly read it?—This is dated 31st May 1869: "I have to report that No. 221, third-class fireman, George Ray, had his leg broken by an omnibus coming in contact with him when on a horse in the Clapham-road, on

Mr. *H. De la Hooke.* 25 May 1876

the 8th instant. Ray had gone down with an engine to Tooting, and having left the engine, was returning to his station with the horses and the coachman. He was riding one of the horses, and was in advance of the coachman about 100 yards, and on his proper side about eight feet from the pathway, nearly opposite the Hospital for Incurables, when an omnibus (No. 6666) belonging to the London General Omnibus Company, which was travelling in an opposite direction, suddenly came from its near to its off side to avoid, as Ray supposes, some stones recently laid down, and, before he could get nearer to the pathway, the off side hind wheel caught his right leg and the off side shoulder of the horse. Ray was assisted off the horse and conveyed in a cart to Guy's Hospital, where he now remains, and the doctor says that it is a very bad fracture of the tibia, or principal bone, with a considerable amount of contusion. The horse's shoulder was very much cut. The road is 30 feet wide where the accident occurred."

3740. That does not show that he was not on duty, does it?—Perhaps that is a question of opinion. The view which the Fire Brigade Committee of the Board took was, that it was not part of the duty of a fireman to be riding a horse, and they thought that if all the men of the fire brigade were to ride the horses of the brigade through the streets of London there would be a great many more accidents than the Board could make itself responsible for. The report says that Ray was sent to Tooting with an engine, with two horses and a coachman. The coachman is in the employ of the horsemaster, and it is his business to look after the horses, and to take them back. It was not the fireman's business, so far as the committee could ascertain, but it was the coachman's business, a man skilled in managing horses, to take his own two horses back.

3741. Would you consider that Captain Shaw was the best judge of what the man's duty was?—I do not know who would be the best judge; the Fire Brigade Committee exercises its own judgment.

3742. Are not the men of the fire brigade under the command of Captain Shaw?—Yes, they are.

3743. He is the chief officer, and is he not the best judge of what the men's duties are?—He is the officer of the Board, and the Board forms a judgment with reference to what the men's duties are, I believe.

3744. Do you not mean to say that the committee rely upon Captain Shaw seeing that the men perform their duty?—The Board rely upon Captain Shaw seeing that the men perform their duty. Captain Shaw made his report on the case, and the Fire Brigade Committee having made further inquiries of him, were not able to see, from the replies he gave, that it was Ra ys business to be riding the horse.

3745. I will read you Question 1362: "Is it not the case that, after the committee had sent the matter up, the Board sent it back to be re-considered, and the committee went into the matter and reported that the poor man had not been on duty riding the horse, and that they did not feel that they could, consistently with their duty, give him more?" And to that question Captain Shaw replies, "That was their version of the case, but I never reported that the man was not on duty; on the contrary, I considered that he was, but the matter was looked into very closely." After Captain Shaw made that answer you state in this column that he was not on duty?—Perhaps the honourable Member will allow me to say that I prepared this return from the records of the Board, and I took the Board's view of this case, as expressed in the Board's minutes. In the minutes it is stated distinctly that the man in riding the horse, could not be considered to have been engaged in the discharge of a duty.

3746. *Chairman.*] What you wish the Committee to understand is that Captain Shaw may have presented his view when he was bringing the case before the Board, but that upon consideration of the subject the Board decided that Captain Shaw's view was incorrect, and that the man ought not to have been riding the horse?—Probably so.

3747. Sir *James Hogg.*] Is there any record of Captain Shaw's having stated that the man was on duty at the time?—No, he does not say whether the man was on duty or not. Captain Shaw states the facts, and the committee judge from them.

3748. Mr. *Ritchie.*] Would it not rather follow that if Captain Shaw reported that an accident had happened to one of his men, if the man was doing anything he

Mr. *H. De la Hooke.*
25 May 1876.

he ought not to have done Captain Shaw would have brought that to the knowledge of the Board, but if he had been doing his duty Captain Shaw would not have thought it necessary to have said anything further?—When Captain Shaw first made his report to the Fire Brigade Committee they went into the circumstances, and made a recommendation to the Board to give the fireman 10 *l.* Many members of the Board were much surprised at this; they said, "What, only give 10 *l.* to a man who has lost his leg." The matter was then referred back to the committee for re-consideration, and the committee in their further report state this: "Your committee would call special attention to the fact that Ray was not engaged in the actual performance of duty for the Board when the accident happened. He had gone with an engine to Tooting, and returning, was riding one of the horses, the coachman being on the other, when the omnibus struck his leg. It appears to your committee that although it was quite natural that he should prefer riding to walking, he can hardly be considered to have been engaged in the discharge of a duty."

3749. My question to you was rather with regard to the question put by the honourable Chairman of the Metropolitan Board of Works. He asked you the fact, "Is there any record which shows that Captain Shaw said that this man was on duty?" What I ask you is this: If Captain Shaw made no report that he was not on duty, the natural inference is that he was on duty; is not that so?—No, I do not know that that is so. A man is not on duty all the 24 hours of every day, I think.

3750. *Chairman.*] Does not it rather appear that Captain Shaw before the committee represented that he believed that the man was on duty at the time of the accident; the consideration of the question took place before members of the committee, and upon the evidence which was brought forward on that occasion, the Board decided that Captain Shaw was wrong, and that the man was not on such duty as would entitle him to claim compensation from the Metropolitan Board of Works; is that what you mean?—I have nothing whatever to show that Captain Shaw stated his opinion at the time that the man was doing his duty in riding the horse; it was of course the man's duty to be coming back from Tooting to the engine station to which he belonged; but the Board allows travelling expenses to firemen going from one station to another, and incurs a large annual expense by doing so, and certainly the Board does not understand that the firemen ride through the streets of London upon the brigade horses.

3751. Mr. *Ritchie.*] May we not infer from Captain Shaw's answer that he did represent to the committee when the matter was under consideration that the man was on duty, but that he was overruled by the Board giving it as their opinion that the man was not on duty at the time of the accident?—I was going to say that probably the Board did not consider the man to be altogether off duty at the time; in fact he was on duty in coming back from one station to another; but that it was not part of his duty, having to go from one station to another, to ride the coachman's horse.

3752. Where did he have to come back from?—He had to come back from Tooting to some other station.

3753. There is another case I wish to refer to, namely, the case of Smart. You say, with regard to Smart, that he was "17 years in the service of the parochial authorities at Greenwich before he was taken over by the Board, and it was thought right that the Greenwich authorities should compensate him in respect of the time he passed in their service"; and you state, in the "Length of Service" column, three years and four months as his length of service in the Metropolitan Fire Brigade?—That is so.

3754. Is that the system you have adopted throughout the whole of this Appendix, that you have only put in the time that the men were in the service of the Metropolitan Fire Brigade?—I have put in the time that the men were in the service of the Metropolitan Fire Brigade and the London Fire Engine Establishment.

3755. You do not include service under the Society for the Protection of Life from Fire?—No, I think there is a case in the return, two or three lower down, of George Low, who was under the Royal Society for the Protection of Life from Fire for 20 years; his term of service as there stated is the term under the Board itself.

3756. In taking over these men from the society, was not it understood that

Mr. *H. De la Hooke.*

25 May 1876.

their term of service was to count?—No, I think not; I believe it was shown to the committee at the time that Low had received a sum of money as compensation on leaving the Royal Society to take service under the Board.

3757. What do you say with regard to the case of Smart?—I think Smart is the only case in this list of an officer who was formerly under a parochial authority having joined the fire brigade and become incapacitated.

3758. Do you know whether the Board recommended his case for consideration by the authorities of Greenwich?—No, but I remember the representative of Greenwich at the Board desiring that Smart's case should be reconsidered, and that he might have a larger allowance; and I remember the proposal being refused, upon the ground that as Smart had spent the best part of his time of service under the Greenwich authorities, the Greenwich authorities should compensate him for that period of service. He was parish engine-keeper of Greenwich, and the Board took him over at the time the brigade was formed, because it desired, as far as possible, to relieve the parochial authorities from the responsibility of having to compensate men who were obliged to give up their posts, and who were still able to serve.

3759. If you took over the responsibilities of the parochial authorities, of course you incurred them yourselves?—I do not say that the Board took over the responsibilities of the parochial authorities. What I mean to say is this,—that whereas the parish-engine keepers were obliged, on the passing of the Fire Brigade Act, to give up their posts as parish-engine keepers, the Board, when it found the men fit for further service, took them into the brigade, but the Board did not take over the whole responsibility of compensating them for the term of service that they had spent under the parish authorities.

3760. But at the time you took them over, I suppose they had some claim upon their old employers?—They would have had if the Board had not taken them over.

3761. That being so, did not the Board consider that they were bound to take into consideration the previous service of those men whom they had taken over?—No, certainly the Board did not.

3762. Did the men come over upon any such understanding?—The men were very glad to come over; they made no terms at all. They were very anxious to get appointments in the brigade without making terms. The honourable Chairman of the Metropolitan Board of Works has just handed me the Fire Brigade Act, the 10th section of which says: "The vestry of any parish or place in the metropolis may allow such compensation as they think just to any engine keeper or other person employed in the service of fire-engines who has hitherto been paid out of any rate raiseable in such parish or place, and who is deprived of his employment by or in consequence of the passing of this Act." It was quite understood, I remember, that when that man left, the Greenwich authorities would be able to compensate him.

3763. In point of fact, do you know whether the Greenwich authorities did compensate him?—No, I do not; but I know that interest was taken in his case by the representative at the Board of the parish of Greenwich.

3764. Will you refer to the three cases of William Mellett, Michael Coughlin, and Benjamin Howell. I am anxious to know upon what principle the sums allotted to them were paid. I find William Mellett's length of service is three years, and his compensation 10 *l.*; Michael Coughlin's length of service five years, and his compensation four guineas. Can you give the Committee any information with reference to the system which was adopted in compensating these men, because here is a man who served five years and gets four guineas, while the man who has served three years gets 10 *l.*?—There might have been some special circumstances reported at the time; but I have explained that there is no definite basis on which gratuities are granted; each case is considered separately and specially, and having referred to the minutes I cannot give any reason for the difference.

3765. A little further down I see Thomas Chard with five years and six months' service, and he got 15 *l.*?—Yes.

3766. So that the unfortunate Michael Coughlin, with five years' service and a gratuity of four guineas, appears to have been very hardly treated?—It would appear so.

3767. Now there is one other case to which I have to refer, namely, that of Charles Atwood, who is discharged on account of infirmity, paralysis, after a length

length of service of 11 months, with a gratuity of four guineas; have you the surgeon's report with regard to this man Atwood, or do you remember yourself whether that paralysis was caused by an accident which happened to him?—I do not find that the surgeon's report in Atwood's case was laid before the committee; I have only Captain Shaw's report.

3768. What is Captain Shaw's report?—"I have to report that fourth-class fireman Charles Atwood is suffering from paralysis, and is generally unfit to do any more duty in the brigade. I beg leave therefore to recommend that his services be dispensed with, and that he be allowed such compensation as the committee may think proper"; adding that his conduct has been satisfactory.

3769. You do not know anything about what the paralysis was caused by?—No.

3770. And you do not know that there was any surgeon's report upon that case?—I do not.

3771. Do you know how long he lived after he went into the hospital?—I do not.

3772. However, the Board thought that the merits of the case were amply met by a gratuity of four guineas?—Yes. On looking further on, I find a report showing that he died upon the 8th of November.

3773. Does the report state what caused his death?—No, it does not. I think if it had been caused by any accident, or anything of that kind, Captain Shaw would have stated it.

3774. I wish to ask you another question with regard to Radford; were Radford's family obliged to clear out of the station that he occupied?—No doubt that was so.

3775. Some comparison has been made with regard to Radford's pension, and that which he might have received had he been in the police; are you aware that the police can specially consider any case of a man who is disabled from injuries received in the course of his duty, and can, on the report of the chief officer, give him a pension equal to his full pay?—Yes, I am aware of that.

3776. You do not think that Radford's case might be almost said to be one in which he had received injuries in the course of his duty; the doctor reported it, did he not?—From the report made to the Fire Brigade Committee by Captain Shaw, it does not seem to be a case coming under that category.

3777. The surgeon reported that the man's illness was caused by his duty?—Captain Shaw did not state that in his report to the Fire Brigade Committee.

3778. But did not the surgeon say so in his report?—I do not think the surgeon's report was laid before the committee.

3779. Did the surgeon fill in some of these remarks?—Not that I know of.

3780. *Chairman.*] Would the surgeon's report go before the Board, or would it be made for Captain Shaw's information?—In the first instance the report is made for Captain Shaw's information unless the committee has called for it specially. Captain Shaw generally states fully in his report all the circumstances which the medical officer brings to his knowledge; and in this report by Captain Shaw on Radford's case he is stated to be suffering from disease of the lungs, such disease having been brought on by the hard work; that is to say, the general hard work of a fireman telling on his health, not that the disease was the result of any accident.

3781. I did not put it in that way?—I understood you to call attention to the provision attached to the police scale of pensions to the effect that if a man received injuries in the execution of his duty, wholly incapacitating him, he might receive a pension to the amount of full pay; but this is not such a case, according to Captain Shaw.

3782. Mr. *Ritchie.*] Captain Shaw made a very strong appeal to the Board on behalf of this man Radford, did he not?—Captain Shaw made a very strong representation as to his excellent conduct, but hardly an appeal I think.

3783. Will you read Captain Shaw's report?—I will. "I have to report that No. 15, first-class engineer, Charles Radford, is suffering from incurable disease of the lungs, and will never again be fit for active service. Charles Radford entered the brigade in June 1856, and after passing through the several grades, was appointed in 1866 to the rank of a first-class engineer, which position he still holds. In 1868 he was sent to the C. or East End district as engineer of the superintendent's station, a post involving great labour and responsibility, and he

Mr. *H. De la Hooke.*

25 May 1876.

performed the duties in a most satisfactory way until April of last year, when the hard work began to affect his health, and after consultation with the surgeon and myself, he found himself reluctantly compelled to give up his position and accept the charge of an ordinary station. He then went to the new station at Holloway, and at first we had reason to hope that he would be able to go through the lighter labour of the outlying districts, but unfortunately he made the change too late, and after struggling through the remaining months of 1872, he was struck down in the beginning of the present year with an illness which, though at first apparently not very serious, and from time to time almost disappearing, has evidently led to his present hopeless condition. Charles Radford was born in 1832, and has the following family:—His wife, Sarah Jane Radford, aged 42 years; Sarah Elizabeth Radford, 12 years: Clara Alice Radford, 6 years; Charles Radford, 1½ years. He has raised himself by his own good conduct, industry, and ability to one of the highest positions in the brigade, and commands the entire confidence of myself and the superintendents under whom he has served; I therefore beg leave most respectfully to recommend him to the favourable notice of the committee, and in conclusion I ought to state that his unfortunate case commands the entire sympathy of his brother officers, and of all ranks in the brigade."

3784. Was any report ever received by the committee from Captain Shaw drawing attention to the inadequacy of 5 *l.* for the expenses of a funeral?—There was one dated the 7th January 1875: "In connection with the two cases of death which I have had to report to-day, I beg leave to call the attention of the committee to the amount allowed for burying men who die on duty, and to recommend that it be altered from 5 *l.* to 10 *l.* The amount hitherto allowed, 5 *l.*, proves to be insufficient for the purpose, and invariably leaves the widow somewhat in debt for mourning and other inevitable expense, and as there are altogether very few cases of death in the brigade, I trust that the committee may be pleased to adopt the recommendation which I have ventured to make concerning the funeral allowance."

3785. What was done upon that?—"It was moved by Mr. Freeman, seconded by Mr. Savage, and Resolved, That the committee do recommend the Board to increase the amount allowed for funeral expenses from 5 *l.* to 7 *l.* 10 *s.*" That was not adopted by the Board.

3786. And the sum still remains at 5 *l.*, although Captain Shaw has reported that in most cases that sum leaves the widow in debt?—Yes.

3787. Mr. *Hardcastle.*] As great interest seems to have been excited by Ray's case, I should like to ask you whether I correctly understood you to state that money is allowed to firemen to pay their fare back, say from a fire at Tooting?—That is so.

3788. Then if the man had arrived safely at the central office, I suppose his fare would have been paid him?—I do not know exactly how the details are arranged by Captain Shaw, but I know this, that every month, or every fortnight, a large amount is paid by the Board for travelling and incidental expenses for firemen, and I have often heard Captain Shaw explain to the committee that omnibus or railway fares are allowed to firemen going from place to place.

3789. If that was so, I suppose the man would have saved his fare by riding on the horse?—I do not know in that particular case whether the man would have been allowed the fare or not. I only know that a considerable amount is paid for travelling expenses for the firemen.

3790. You were asked whether you did not think that Captain Shaw, not having said either way whether the man was on duty or not, was to be taken as a proof that he thought he was on duty, and I think you stated that you did not think that was a proof?—Quite so.

3791. Did Captain Shaw say anything, as far as your recollection goes, at that meeting, to the effect that he considered, notwithstanding the opinion expressed by the committee, that the man was on duty?—No, I do not remember his saying that.

3792. My view, then, would be that Captain Shaw left it, having stated the facts, to the committee to say whether the man was on duty or not; is that what you would say?—As I stated just now, if the man went to the station and had to come back, he was on duty both going and coming; but though it was his duty to get back to the station, it was not his duty to ride back upon a horse, when

when there was the horse contractor's man who had charge of the horses going back with them.

3793. If anything had happened to the horse in consequence of the unskilfulness of the rider, do you think that the Board would have given compensation to the owner of the horse?—I cannot answer that.

3794. Sir *Andrew Lusk.*] You have been giving a good deal of evidence with regard to pensions; do you know whether, in the army or the navy, if a man gets disabled or killed, the authorities give a pension or gratuity to his father or mother?—I cannot, from by own knowledge, give any evidence upon that point.

3795. Or in any occupation that you know of; it is very customary, as I dare say you know, to give pensions to widows or children; but do you know that it is customary to give pensions or gratuities to relatives, to people who are not dependents?—I do not know any service in which it is customary to do so.

3796. With regard to this man Guernsey, who was killed at the City Flour Mills, did the jury recommend compensation to his relatives because he had done his duty?—Yes.

3797. Do you expect your firemen generally to do their duty?—I think they generally do.

3798. Do you think that when a jury recommends a man because he does his duty, that is a case for compensation?—I do not know that I can express an opinion upon that point.

3799. But you have expressed a number of opinions?—I have been endeavouring to state facts.

3800. Does your Board consider that if a man simply does his duty he is entitled to any particular compensation?—No, I think not.

3801. Does your Board represent the public in any way?—Yes.

3802. I understand that it represents the public in so far as it is the Metropolitan Board of Works?—Yes.

3803. Is the Metropolitan Board of Works the head of the fire brigade?—The Metropolitan Board of Works is the body entrusted with the administration of the fire brigade.

3804. Is Captain Shaw a servant of the Metropolitan Board of Works, or is he a Government officer?—He is an officer of the Metropolitan Board of Works.

3805. You were asked whether Captain Shaw was not the best judge of the men's duty in all cases?—I was asked that.

3806. Would you mind answering it again?—I forget the exact answer which I gave, but I think I said that the Board exercised its own judgment.

3807. These are questions which you have been asked, and I ask you as representing the Board, as their secretary, whether you think that your Board ought to be ignored altogether, or whether they should not exercise some discretion in matters relating to the fire brigade?—I think there is a member of the Board coming before this Committee who will be able to answer those questions in a way which will be more satisfactory than any answer that I can give.

3808. You are representing the committee of the Board as their secretary. Now I noticed that some of the Members of the Committee have copies of the Minutes of the Board; do you publish copies of your minutes?—The Board minutes are not published, but they are printed for the use of members of the Board.

3809. Captain Shaw made a strong appeal in reference to Radford; did your committee consider the case of Radford?—It did.

3810. And came to a certain conclusion?—Yes.

3811. And I suppose that they usually do that in almost all cases which come before them?—Yes.

3812. I suppose they deliberate upon most of the subjects which come before them, and come to conclusions, as most people do?—They do.

3813. Sir *Henry Peek.*] You do not consider your printed reports private or confidential, do you?—That depends upon circumstances. Reports which have been laid before the Board, and read at meetings of the Board, become public documents; that is to say, any ratepayer has the right to come and look at them. They are not published so that anyone may obtain printed copies on demand, but any ratepayer has a right to look at the printed minutes and reports.

Mr. *H. De la Hooke.*

25 May 1876.

3814. Sir *James Hogg.*] But the minutes of the committees are private, are they not?—Yes.

3815. And the letters which have passed between the committee of the fire brigade and the chief officer are most of them private, unless they have been presented to the Board?—They are private documents.

3816. And they are generally considered as private documents, are they not?—They are.

3817. Mr. *Ritchie.*] Is there anything upon the face of them which implies that?—There is nothing upon the face of any of them which implies that they are private.

3818. Sir *James Hogg.*] Is it not the usual practice that committee minutes are private, and that nothing is considered public except what is brought before the Board, as a Board?—That is so.

3819. With regard to some questions which Mr. Ritchie asked you with regard to the Sloane-square station, did not Captain Shaw report to the Fire Brigade Committee upon the 19th of November 1868, that the Sloane-square station was quite unsuited for our purposes, and scarcely fit for habitation?—That occurs in Captain Shaw's report.

3820. *Chairman.*] Is that in the printed Appendix?—Yes, it is in the first Appendix.

3821. Sir *James Hogg.*] Did Captain Shaw draw attention in his report of the 19th November 1868, to any danger which he thought would arise from the removal of that station?—No, he did not.

3822. Was Captain Shaw's report referred to Mr. Cresy for his examination?—It was referred to Mr. Cresy to report as to the condition of the station.

3823. Did Mr. Cresy agree with Captain Shaw's recommendation that the station was unsuited for the purposes of the fire brigade?—He did.

3824. Was anything said by Captain Shaw about the risk of giving up that station when Mr. Cresy's report was read to the Fire Brigade Committee at their meeting on the 22nd December 1868?—I think nothing was said at that time.

3825. Did Captain Shaw at any time between his report of the 19th November, which was made to the committee on the 25th, and the 22nd December 1868, draw the attention of the Fire Brigade Committee or the Board to there being any risk to the district in giving up the Sloane-square station at the earliest possible moment?—No, he did not.

3826. What was the first intimation that the Board received of Captain Shaw's apprehensions of any risk on account of the removal of the Sloane-square station?—The first intimation was in the letter which the honourable Member for the Tower Hamlets read the other day.

3827. Is that an original document?—It was a copy of Captain Shaw's letter.

3828. Do you know what accommodation there was at the Sloane-square station; how many men and engines were there there?—There were six men and one engine at the Sloane-square station.

3829. Can you tell me how many men and how many engines there are now at the present time at the Victoria-street station?—Ten men and two engines.

3830. And how many men are there at the South Parade Station?—There are eight men and two engines there.

3831. Do you know what the distance is between Victoria-street and Sloane-square?—I should say that Victoria-street is about a mile from Sloane-square.

3832. What is the distance from South Parade to Sloane-square?—The distance from South Parade to Sloane-square is, I think, about 7-8ths of a mile.

3833. Were not those other sites fixed upon after Captain Shaw's full approval and recommendation?—I think so.

3834. Was there any disapproval by Captain Shaw of those two stations you have just mentioned?—I think not.

3835. Did the Board preserve a fire-escape station at Sloane-square when the premises were given up?—Yes.

3836. What fire-escape stations are there at the present time in the neighbourhood of Knightsbridge, Belgravia, and Pimlico?—There are five fire-escape stations in that neighbourhood.

3837. Can you give me their names?—There is one at St. George's-road, one in

in Upper Belgrave-street, one in Sloane-square, one at Knightsbridge, and one at Pelham-crescent.

3838. I think the Committee have it in evidence already that all the fire-engine stations are united together by telegraphic communication?—Yes, they are.

3839. So that if any fire occurs, the engines can be called out at once?—Yes.

3840. *Chairman.*] Are the fire-escape stations connected by telegraph?—Not the fire-escape stations.

3841. Sir *James Hogg.*] You have been asked a good many questions about the fire at the Pavilion-road, at the floor-cloth manufactory, and at the Pantechnicon. Is there any record of any complaint of the non-arrival of fire-engines or fire-escapes at any one of those fires?—I believe not.

3842. If there had been such a report, you would have been able to bring it up, would you not?—I should.

3843. Then you were asked about the forms which are sent out at fires; were not those forms agreed upon in the Act of Parliament between the Board and the companies?—A clause in the Act of Parliament requires information to be sent to the offices; I forget whether the form was agreed upon. The form is a form which is quite satisfactory to the insurance companies.

3844. *Chairman.*] The clause is the 31st clause in the Act, which says: "The Metropolitan Fire Brigade shall in the morning of each day, with the exception of Sunday, send information, by post or otherwise, to all the insurance offices contributing for the purposes of this Act, of all fires which have taken place within the metropolis since the preceding return, in such form as may be agreed upon between the Board and the said companies"?—Then the form was agreed upon.

3845. Sir *James Hogg.*] So that, practically, all the information which the fire insurance companies want is furnished by means of that form?—Yes.

3846. Just tell me something with reference to the horses; most of the horses for engines are hired, are they not?—The horses are all hired.

3847. And very often there are men hired to drive the engines and take care of the horses, are there not?—Yes.

3848. Whose duty is it to look after those horses?—It is the duty of the horse-master, and the men he employs.

3849. I think you have already stated that it is no part of the fireman's duty to have anybody to do with them?—The Board understands that.

3850. With regard to the application made by Guernsey; who was it that inquired into it besides Captain Shaw?—It was Mr. Wakefield, the clerk of the Board.

3851. I think he made special inquiries with regard to the circumstances of Guernsey's parents by order of the Board?—He did.

3852. And then he reported that Guernsey's parents did not require any assistance, and that they were not, and had not been, dependent at all upon their son?—He reported that they were not dependent upon their son.

3853. And that quite confirmed Captain Shaw's opinion, who reported the same thing?—That is so.

Monday, 29th May 1876.

MEMBERS PRESENT:

Mr. Forsyth.	Sir Henry Peek.
Mr. Hankey.	Mr. Ritchie.
Mr. Herbert.	Mr. Young.
Mr. Onslow.	

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

[Adjourned to Monday, the 12th June, at Twelve o'clock.

Monday, 12th June 1876.

MEMBERS PRESENT:

Mr. Forsyth.	Sir James Hogg.
Mr. Hankey.	Lord Lindsay.
Mr. Hardcastle.	Mr. Locke.
Mr. John Stewart Hardy.	Mr. M'Lagan.
Mr. Hayter.	Mr. Onslow.
Mr. Herbert.	Sir Henry Peek.
	Mr. Ritchie.

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

Mr. *Robert Freeman*, called in; and Examined.

Mr. *R. Freeman.*
12 June 1876.

3854. *Chairman.*] YOU were, I believe, Chairman of the Fire Brigade Committee of the Metropolitan Board of Works?—I was. I was so when the brigade was transferred to the Metropolitan Board of Works.

3855. You were so on the first taking it over by the Metropolitan Board of Works in 1866?—I was. The brigade was at first under the Main Drainage Committee, but shortly afterwards the work of the brigade became so large that the Board had to appoint a special committee, and of that committee I was chairman from June 1870 to June 1872.

3856. Having also been chairman of the committee which had the superintendence of the matter at the time of the transfer to the Metropolitan Board of Works?—Yes.

3857. How often did your committee meet at that time?—The Main Drainage Committee met, as a rule, every week, and the special committee met once a fortnight.

3858. And I suppose all the details relating to the working and administration of the fire brigade were at those fortnightly meetings brought before the committee?—No, not all the details by a large amount. Captain Shaw had almost absolute command of what may be called the executive department.

3859. Will you state to the Committee, if you please, what were the subjects which were generally considered by that committee dealing with the fire brigade which met fortnightly?—I should say every subject except that of ruling and regulating the brigade as to the management of the men, the engines, and everything of that kind.

3860. That is with regard to discipline, in fact?—Except with regard to the executive as to discipline and arrangement.

3861. But all the questions relating to increases either of men or material, or the re-distribution of the positions where the men were stationed, would naturally come before the Board?—Yes; especially if there were any increase of a station, but with reference to the arranging of men in the stations which already existed, we never interfere with Captain Shaw; Captain Shaw arranges all that exactly according to his own will and pleasure.

3862. What you represent to the Committee is that the Fire Brigade Committee would not deal with any alterations in the stations of the numbers of men, but would simply deal with the question of a proposed increase to the whole staff?—Quite so.

3863. What funds are there under the Fire Brigade Act which were placed at the disposal of the Board for the purpose of this Act?—At the outset, under the original Act, there were the proceeds of a halfpenny rate, and 10,000*l.* from the Government,

Government, and an annual sum from the fire insurance companies; those three were the sources of income.

3864. Have you any record what the amount of the rate, taking that first, did produce at the time of the transfer, and has produced since?—I thought that had been given so distinctly by Mr. De la Hooke that I did not prepare myself on that point.

3865. What I understand is that the funds at the disposal of the brigade are first, the halfpenny rate; secondly, the 10,000 *l.* contribution by the Government; and thirdly, a varying contribution by the fire insurance companies?—Just so, and I may just add that the proceeds from the halfpenny rate have of course varied. As the assessment of the metropolis has increased, so the produce of the halfpenny rate has increased. This year it amounts to 5,000 *l.* or 6,000 *l.* increase.

3866. In 1866 I see the halfpenny rate produced 30,913 *l.*, whereas in 1876 it will produce 48,148 *l.*?—That is so.

3867. And that is a rate which naturally increases every five years when a fresh valuation of the metropolis takes place?—Just so. I might supplement that by saying that the capital which the Board were at liberty to expend, namely, 40,000 *l.* in building stations, purchasing land and adding plant, was burdened with 7,000 *l.* of mortgages upon the buildings which came over to us from the old brigade.

3868. That is a distinct account separated from the expenditure account, which you have just referred to?—Yes.

3869. And that 40,000 *l.* of the distinct account was added to under subsequent Acts, was it not?—It was.

3870. With regard to the expenditure account, and what the halfpenny rate produces, I understand you to state that there would be an increase probably of about 5,000 *l.*?—From 5,000 *l.* to 6,000 *l.* by the assessment which took place in April last.

3871. Therefore the probability is that in 1877 the increase upon the 48,148 *l.* will amount to between 5,000 *l.* and 6,000 *l.* more?—It is a certainty.

3872. The capital account has been very much in excess of the 40,000 *l.* first given to you, has it not?—Yes; feeling ourselves crippled with regard to capital, and a Bill passing through the House, we did our very best, and succeeded in getting the halfpenny rate relieved of the interest and annual repayment of principal with regard to the 40,000 *l.*

3873. When was that?—That was in 1869.

3874. The Government were applied to on that occasion to release the Metropolitan Board of Works from that obligation?—They were, and we also obtained power to expend more capital in erecting stations, purchasing land, and adding to the plant.

3875. What was the amount then added?—It has run up the capital expenditure to 115,000 *l.* in the first instance, and then we took power to borrow another 15,000 *l.*

3876. Those borrowing powers you have not at present exercised, have you?—Yes, I think we have largely.

3877. You have exercised the power of borrowing upon that 15,000 *l.*?—Yes, I think we are already pledged to spend about half of that. There would be about 7,000 *l.* or 8,000 *l.* in hand of that 15,000 *l.*, for the purposes of building other stations. I might just say that no part of the interest upon this capital account or the principal is paid out of the halfpenny rate. We took power to pay that out of the consolidated income.

3878. Was any other addition made by the Act beyond that with reference to your revenue?—None whatever.

3879. The revenue now stands at the halfpenny rate, relieved of all those charges; the 10,000 *l.* contribution from the Government, and the contribution, varying as it does, from the fire insurance companies?—Exactly so.

3880. Has the expenditure of that 123,000 *l.* been spent principally in erecting stations?—It has been spent in purchasing land, erecting stations, and adding new engines and plant. We have no power to spend a single shilling of that for current expenditure. It is strictly tied up for the purposes I have mentioned.

3881. It is distinctly a capital account for providing additional material, if I

Mr. *R. Freeman.*

12 June 1876.

may so call it, and stations?—Additional lands, stations, permanent plant, and material.

3882. Has the pay of the men been increased considerably as your revenue has increased?—The pay has been increased, and so increased that I believe the men have themselves admitted that they are perfectly content with the pay they receive, which in the present day I think is a very considerable admission.

3883. You state that generally with regard to their pay, the men admit that they are in receipt of fair wages?—The men admit that they are in receipt of fair wages.

3884. Apart from any question they may have raised with reference to retiring pensions?—Quite so.

3885. Now with regard to your views as to the increase of the brigade; do you from your experience upon that committee think that the power should be given to the Board to enlarge the force of men?—I should like to see the restriction removed from the halfpenny rate, and I feel quite sure that the Board would, whenever a good case is made out, add to the number of stations and the number of men, and do whatever was proved to them to be required, reasonable and right. I may just add that we have been considerably restricted by having only the proceeds of the halfpenny rate, but we have done to the very utmost what we could with that.

3886. Then representing the Board during the time you have mentioned, you believe that the Board have, as far as their income has allowed them, met the necessary increases of staff and wages that were brought before their notice by Captain Shaw?—I believe they have.

3887. And in your opinion if a greater force were required for the protection of life and property in the metropolis, greater powers should be given with regard to increasing that halfpenny rate?—No doubt.

3888. You have heard most of the evidence which has been given before this Committee, I presume?—I have.

3889. And you heard the evidence given by Captain Shaw with regard to the increase of staff which he considered necessary?—I did.

3890. Has the scale of increase by which Captain Shaw proposed to raise the existing staff by 200 men been considered by the committee?—I do not know that the exact number of 200 men has been considered, but the question of adding to the brigade from time to time has been considered.

3891. But what I understood from Captain Shaw's evidence was this, that whereas he suggested that a large force of about 900 men, with appliances equally increased, would represent what he thought would entirely meet the necessities of the case for protecting property and life, the other plan which he put before the committee was that the present material and the present staff could be made thoroughly efficient, as far as they went, by an addition of 200 men; I wish to ask if the committee have had those two distinct proposals before them, and whether they have considered them?—As regards the first, I should say that the committee, and I think the Board would say also, that the proposition to increase the number to 900 men, or whatever the number was, would be a very extravagant proposition; it would, in my judgment, be a waste of the public money, and viewed from a commercial standpoint, it would not answer any purpose at all. It would be expending 10,000 *l.* to save 1,000 *l.*

3892. I suppose you would admit that if more money were at your disposal, the present staff is not what you would wish to see it for the purpose of meeting cases of fire in this city?—There are several new fire-stations which I should like to see added, and there are several fire-escape stations which I should like to see added, which would involve an increase of men.

3893. That would involve an increase of men proportionate to the increase in the number of the places where they would be stationed?—Yes.

3894. But I wished to ask whether you yourself and the committee had considered the question of the increase of men at the existing stations, which have been pointed out by Captain Shaw as necessary, both from the point of view of the overwork of the men, and also of the few men who are shown to be available for duty on emergencies at night?—Of course if money were of no consequence, if rates were nothing, and if people were perfectly willing to respond to our precepts when we send them out, we should like to increase the number of

men

men and stations, and everything else; but if this involves the question of whether Captain Shaw's evidence is accurate and fair as to the manner in which the men are worked into sickness, and I know not what, I differ very strongly from Captain Shaw, and I am quite prepared to enter upon that question.

3895. We will take the two questions distinctly if you are prepared to go into them. Take the question of overwork, which implies the necessity, if it is proved, of adding to the strength at the different stations, and which, I infer, is really implied in the recommendation of Captain Shaw, to add 200 men to his existing stations. In Captain Shaw's evidence at page 48, Question 689, when he was asked by the Committee he gave several instances of overwork. He says that "There was a man at Brompton, who had been on duty 42 consecutive hours; a man at Hammersmith was on duty 51 successive hours; a man at St. Pancras was on duty 42 successive hours; a man at Holloway was on duty 74 successive hours; and four other men, at the same station, Holloway, have done 60 consecutive hours' duty latterly; a man at Bishopsgate was on duty 55 successive hours"; and he mentions some other cases. A man at Sydenham was on duty 120 successive hours; another man 108 hours. At first sight those appear to be very excessive hours of work?—They do.

3896. Are you aware that any such length of so-called work has existed within the last year?—I was not at all aware of it until stated by Captain Shaw in evidence here, and may I just add that that rests entirely with Captain Shaw himself, and not with the Board; and, as it is called duty, I should like it to be understood what the duty consists of for the 36 hours.

3897. As we understand, it has been put before the Committee that the duty there represented means the absolute impossibility of the men taking their clothes off and lying down; in fact, taking a real rest from labour; that the men are obliged to be ready to be called at any time during this excessive number of hours?—Being somewhat startled at the serious evidence given by Captain Shaw in relation to that point, a few of the members of the Fire Brigade Committee went round, about 10 days back, to some of the stations. We had gone about 18 months before, and we thought we would go round again, so as to satisfy ourselves with reference to what this duty of 36 hours meant. A man commences his fire brigade duty by taking a watch at the station at seven o'clock at night; he has his locker, and his mattrass, and two blankets, and his pillow, and he is then at perfect liberty to rest the whole night, unless a call to a fire comes.

3898. But he cannot undress?—He cannot take his clothes off, and unfortunately he is ordered to be in his thick boots, with his belt and, in the case of the men on duty with the fire-escapes, his hatchet. It is not for us to interfere with Captain Shaw's discipline; but we found that it took a man about 12 seconds to put on his boots, and 10 seconds to put on his hatchet, but we of course thought that a man would require to have them on in order that he might start with the engine, and so save time; but we were startled to find that the man never did go out with the engine. He calls the men, and gets everything ready, and the engine goes out, and he remains at home. He does not go out at all unless a second call comes; therefore, the necessity for putting him through this purgatory with his hatchet and boots on did not appear to us at all necessary.

3899. With regard to the other men at the station who do go out with the engine, where are they?—They are called down from their beds. I will take the Paddington station for example. There will be three men out with the fire-escape, there will be three in bed, and there will be the man on duty, and the engineer in command. Those who were in bed would be called, and would go out with the engine, and the one at home would remain at home, having no use for his boots or his hatchet unless a second call came, which is a very rare thing, and when he had sent off his first engine he could then put on his boots and hatchet, and be ready for a second call. We therefore thought that the man was made to sleep more uncomfortably than was reasonable or necessary, by keeping on his hatchet and boots, and that those 12 hours of work might be almost as comfortable to him as any other mode of sleeping, if the boots and belt had been left off. I mention that to show that there is exaggeration in what are spoken of as those duties which are driving the men into bad health, and breaking down their constitutions.

Mr. *R. Freeman.*

12 June 1876.

3900. What does the man do subsequently to that turn of duty at the station?—He is on all night, and in the morning he has, with the others, to clean the engines, and if it is his turn he remains on duty, and perhaps goes out with the fire-escape at night; that would be the extreme case of making up the 36 hours, but when we arrived there at 11 o'clock in the morning all the work was over, and everything was in most perfect order; all the men were upstairs in bed, or taking their ease, smoking their pipes, reading their newspapers, and doing whatever they thought proper during the day; those men being on duty, and the engineer with them. Now we were exceedingly glad at seeing them able to enjoy themselves, and to take it easy and comfortably, because I may just say in parenthesis that we all feel that the duty is a most irksome and tiresome and monotonous one from the mere fact that the men have so much time upon their hands waiting about.

3901. Did that, as far as you can understand, comprise the man's duty, because that would only comprise 36 hours; that would hardly seem to include the amount of duty which seems to have been done in some of the cases mentioned?—I may mention that there are three men coming in in the morning at eight o'clock, having been on fire-escape duty all night. Now, supposing that those men had been engaged for 24 or 36 hours before that, instead of putting them to wash and clean the engines, we could see no reason why they should not at once go to bed; that would leave four men and the engineer to attend to the engines, and we venture to think it is, and we have since mentioned it to Captain Shaw, a work of supererogation to clean those engines every morning whether they have been out or not.

3902. How many men were there at that station?—Eight men. Now if Captain Shaw chose to make the arrangement that the men coming off from the fire-escapes, fatigued and tired, instead of falling to and cleaning the engines, and being occupied for the three or four hours which that takes, should go up to bed and leave the engines not cleaned, any more than being dusted, or anything of that sort (which is the case at all private establishments; no other engines are polished up, and cleaned and re-cleaned to the extent that these are). If Captain Shaw was inclined to spare his men and give them rest under this great pressure, it is quite within his own power to do it, and therefore the responsibility rests with him and not with the Board.

3903. You will, of course, understand that these cases of excessive hours of duty are picked out, and are not the ordinary routine; but they show the possibility of men, if the facts are as stated, being very much overworked at times; and supposing a fire took place which called upon the Paddington station, the state of things which you have represented might not be the case?—Of course, there must be extreme cases. We inquired the average number of fires; it was in either Kensington or Paddington that the average number of fires in the month was 12.

3904. Mr. *Ritchie.*] Would that include chimney fires?—No, I should think not; there were only four home fires; all the others were by telegraphic communication from the central station, and the engines went and very likely came back again without having been employed; but out of those fires there were, I think, only two in which they used their engines at all.

3905. *Chairman.*] But although the men may not be out at a fire, and may not be hard-worked, it is possible, is it not, that they may, under the present system, be a long time upon what is called duty without being able to leave their posts?—Yes, they may be; but (not providing for exceptional cases) I venture to think that the evidence which represents that these men are worked in the way in which they are said to be worked, bringing them into sickness, and I know not what, is a grievous exaggeration of the facts of the case; and I further think that if Captain Shaw thought proper, he might largely modify and ameliorate their duty, and give them a very considerable amount of rest and liberty, without the smallest injury to the efficiency of the service.

3906. That evidence was borne out by Mr. Hamlyn in Questions 1912 and 1913. In answer to Question 1912, "Can you tell me how often that has happened?" that is about the men complaining of excessive work, he says, "The men have been complaining now for some years past." Then he was asked, "What is the last date of a complaint," to which he replied, "I have a return here

here from one station in my district last year. One man said he wast on duty five nights and two days: from 7 a.m. on the 29th April to 7 a.m. on the 4th May;" so that it is a complaint which has come to the Committee from the men as well as from Captain Shaw?—There is no doubt about it that the men would like many things as we all should, I dare say; but I cannot see myself that there is any necessity for a case of that kind, unless it arose in a different way. At Paddington we inquired of the engineer: "You, I suppose, are at liberty to give leave?" He said, "Yes, I can give six hours' leave when a man wants it, and if he requires 12 hours I send an order to the superintendent of the division, and he sends it to Captain Shaw, and it is signed almost as a matter of course." He told us that he had given a considerable amount of leave during the last six months, and I said, "What would be the difficulty in letting one of the men upstairs go for six hours now," but he said that unfortunately he had had to lend a man to Notting Hill, not because of any duty or anything belonging to the Board, but because of a man's own fault.

3907. The point has been placed before the Committee very strongly with regard to overwork, not only by Captain Shaw, but also by the men. At Question 714 we have Captain Shaw stating in answer to the question, "Do many men break down in health in consequence of the severe and continuous work?" "Yes, a good many do"?—Upon that I should like to be informed whether there is a larger per-centage of men break down under this service than in almost any other service having the same number of men, and what may be called tiresome and irksome duties to perform.

3908. I dare say you will recollect that there was a petition of the men in 1874 to the Metropolitan Board of Works which set out that point most strongly; they said, "We beg further most respectfully to submit to the consideration of your honourable Board the fact that the duties of the brigade are exceedingly laborious and injurious to health. The men for this service are selected almost entirely for the soundness of their constitutions, and are, before being admitted to those ranks, subjected to a most strict preliminary medical examination; but, notwithstanding this, a great number break down, and in every case have left the service shattered in health, and altogether incapable of following any employment in order to enable them to support themselves and their families"?—I think that Captain Shaw was almost obliged to disown that, or at any rate it was a most extravagant statement.

3909. Captain Shaw was asked, "Is that, as far as you are aware, a true statement of the case of the men?" he said, "Yes, I believe it is; I think it is put very strongly there," but at the same time the statement about their breaking down in health, and the length of the hours which they are stated to work, are things which lead the Committee to think that there is truth in the statement that the men are over-worked?—I am not prepared to say that there is no portion of truth in that statement, but I venture to say that the evidence given by Captain Shaw before this Committee in relation to the conduct of the Board with regard to these men is not what we can assent to; it is so grievously exaggerated.

3910. I would rather separate it from any question of the conduct of the Board into a question of what you would yourself feel, supposing the funds were, as you suggest, available; that is to say, that the halfpenny rate were increased, and that your power of raising money by the rate were enlarged; whether you yourself would feel that those representations with regard to overwork were sufficiently correct to justify the Board in adding, as Captain Shaw suggests, to the strength of the brigade, so as to enable the men to get more leave, and, therefore, to maintain that vigour which is essential for the service?—In 1868, we did that which Captain Shaw suggested; that which he stated would enable him to work the brigade with satisfaction. As we have added to the number of the fire stations and the brigade stations, we have added to the men, and, therefore, we thought, until this evidence came forth, that we had complied very tolerably with what he wished, and what he thought sufficient for efficiency; but I am quite prepared to say that, if larger resources are at our command, there are many places at which we should like to put another man.

3911. As I understand what you have stated, it amounts to this, that you have increased the number of men in cases where the increases of stations have

Mr. *R. Freeman.*

12 June 1876.

taken place, but you have not increased the number of men at existing stations, upon the ground of their being insufficient to do the work properly?—Having added in 1868 the number of men which Captain Shaw estimated as necessary for fairly and properly working his brigade at that time, we have added the number of men necessary for the stations which we have also added.

3912. In your last answer but one, you said that the Board had complied very tolerably with Captain Shaw's recommendations. What do you represent by that qualification?—There is no question that to a certain extent we have been restricted by want of income.

3913. As I understand it, the Committee have had before them always this necessity, that their expenditure must be limited on account of their means being limited, and what I wanted to find out was, whether you thought that when these subjects have been discussed by the Board that has been the reason why it has not been done, and that if their funds had been larger they would have increased their staff at the existing stations, so as to avoid the possibility of any such over-work as is represented here by 120 hours of successive duty?—Yes, we should be most anxious to do that; but I want to guard against being supposed to express an opinion approving of the very large and magnificent establishment which Captain Shaw suggests by his scheme, of 900 men and a central station upon the Embankment. We do not believe that that would be a commercial establishment for the good of the metropolis, but rather a showy one, and certainly not one needed for the protection of life and property in the metropolis. We are anxious to do what is necessary in every direction, but not to branch out into the extravagance which this, in my judgment, would be.

3914. In regard to that, what steps did the Board take to ascertain that a larger staff were not necessary for the better protection of life and property?—By Captain Shaw's evidence, I venture to think he shows that the serious fires have been diminishing from year to year, and that they have come down to the proportion of 8, or at the utmost to 10 per cent., and therefore the only margin for this large brigade to work upon would be this 8 or 10 per cent. Now, with a moderate increase from year to year, and with careful and proper supervision, we believe the brigade is equal to all emergencies.

3915. You remember, perhaps, that an Appendix was put in here showing the Committee that the larger proportion of fires took place in the night?—Yes.

3916. Do you remember the evidence with regard to the number of men who were available at night for duty at fires; was it not shown in the evidence of Captain Shaw that there were only, on the day he stated on which the examination took place, 188 men in the whole of the metropolis available at night for duty; and do you think that your Committee believe that that is really a sufficient staff to cope with the possibility of fire in such a large town as this, at the time when they are represented generally to take place?—If we had additional funds we should make an addition to that staff, as I have already stated.

3917. You will remember that I have been examining you now not upon the proposed increase of the force to 931 men, but upon the question of the 200 additional men which Captain Shaw stated would be required to render his brigade efficient, so as to avoid the difficulty of overwork, and to meet the possibility of the brigade being deficient at a time when these fires at night take place?—I should not have supposed so large an increase as 200 men was necessary at the present moment; if you take any district, we do not profess to depend entirely upon one station at all; they are also arranged that a call coming to one station, that engine immediately goes to the fire, but the telegraphic communication sends word to all the others round and about, and they all go, and the men are there to render assistance and to help each other. We have never proceeded upon the theory that a given number, say six streets, are to rely entirely upon one station; that engine goes in the first instance, but all the others converge and they all work together and help each other; for that reason we have had telegraphic communication made with all of them.

3918. But supposing two large fires to occur at once, you are of opinion that the brigade which is represented as available for duty is insufficient, are you not?

not?—Yes; I should prefer some of the men not to have to work in the way they have when a large fire takes place; I should like the force to be so manned that they should not be subjected to the terrible strain that they have at that time.

3919. The 200 men which Captain Shaw suggested, were suggested by him with a view of relieving that difficulty, and also with the view of giving the men in turn a night off duty at each of the stations; do you think, for that purpose, as well as for strengthening the brigade for its work, it would be advantageous that the number of men should be increased?—Yes; to a certain extent.

3920. But you feel that whereas a certain number of additional men to the present stations might be advisable, had the Board the financial means of increasing them, the larger scheme of 931 staff of men and larger material is beyond the wants of the town?—It is quite beyond the requirements of the town, and I believe it would be a waste of the ratepayers' money. I did not quite understand, and I do not know whether the Committee understood, Captain Shaw's remark that the insurance premiums, by having this very large brigade in operation, would be reduced from 700,000 *l.* to 400,000 *l.* I do not at all understand that theory. If it would have that effect, it would be a good thing, but I, for my part, should not cease to insure my property because there was another station at Kensington. That appears to me to be a theory which I do not think would work out.

3921. But I suppose the result of increasing the number of stations and the appliances of the brigade, and therefore bringing to bear upon fires a larger force at a quicker time, would save very materially the amount of property which is now endangered or lost?—It might save something, but I was referring to the premiums; because the fact that I was only to have my roof burnt off instead of the whole house destroyed, would not prevent me from insuring, nor I think would it prevent other people; therefore, I do not see how these premiums are to be reduced from 700,000 *l.* to 400,000 *l.*

3922. But apart from that I should like to ask you as to the saving of property in the metropolis; I suppose you will admit that that saving would be materially assisted if you could bring instantly to bear upon any given fire when it broke out the appliances which finally extinguish it?—There can be no doubt that if every street in the metropolis had a fire-engine station and an engine you could instantly cope with every fire which broke out; but I very much question whether it would pay the metropolis; when you inquire what is the amount of property destroyed by fire, especially by small fires, I doubt that it would pay, and where you have a very large fire like the Pantechnicon you would have such a body of fire that I doubt very much whether it would be of any use at all.

3923. But is not that very often the result of an engine not arriving soon enough after the beginning of the fire to prevent its spreading?—I do not think it is. Generally speaking in these very large places the fire takes place internally, or out of sight, and becomes such a body of fire before it is seen that it is not easily dealt with.

3924. Was that the case at the Pantechnicon?—I believe it was.

3925. Was not it half-an-hour before an engine arrived at the fire, and, therefore, that time before any attempt was made to check the fire?—I do not think it was half-an-hour. It is my neighbourhood, and I made full inquiry about the fire.

3926. Can you tell the Committee what time elapsed after the fire was announced before the engines were brought to bear upon it?—The first engine that came, I think, was a volunteer one, and the other was there two or three minutes afterwards.

3927. Do you know what time it was after the fire broke out?—I do not recollect distinctly. I inquired fully about the matter at the time, and Captain Shaw and the Board came to the conclusion that there was no serious cause of complaint with regard to the arrival of the engines.

3928. As the result of that part of my examination, I may infer that the restrictions which have been placed upon the number of men and the amount of materials, have resulted from the Board feeling themselves crippled as to their finance, and that had they had larger finance, you believe, though not going to

Mr. *R. Freeman.*

12 June 1876.

the extent represented by Captain Shaw, they would have thought it well to strengthen their stations both in men and material, and to increase the number of existing stations, if possible?—Certainly we have done up to the utmost, but we have had no power to do more. We have obeyed the instructions of the Home Office as embodied in the Act of Parliament.

3929. You say you have obeyed the instructions of the Home Office; in what respect?—I meant that Sir George Grey drew the Bill.

3930. But was not it for you, as the Board administering this brigade, to bring to the knowledge of the Home Office, if you thought it advisable, the necessity for giving larger financial powers to the Board for the purpose?—Yes, but it is an exceedingly difficult thing to get an increase of taxing power; it is very unpopular; and unless the case is very urgent we are not anxious to go and trouble the Departments to bring in a Bill to give us increased taxing power.

3931. I would put it in this way, that the responsibility lies with the Metropolitan Board of Works after they have been by the Act entrusted with the power of protecting life and property; and, therefore, it seems to me to be their duty if, on representations made to them, they felt that the protection to life and property might be increased, and ought to be increased, to represent to the Government that there was a necessity for their having larger taxing power, and to throw the responsibility of the refusal to grant such powers on the Government?—In 1869 we did get a burden taken off the halfpenny rate, and we did get very large means taken as to the capital account, and we did hope, having done that, that we should be able to meet all the needs and requirements of the case.

3932. Notwithstanding that, you have still your chief officer representing to you that his material is not sufficient, as he thinks, for coping with fire, and you yourself admit that if your financial conditions were different you would increase to a certain extent the material and the men?—To a certain extent, but not that the case is so urgent as to induce us to ask the Government to bring in a Bill for new taxing powers.

3933. You did not think that the question of the protection to property was sufficiently made out to justify you as a Board in asking for larger powers?—The majority of the Board has not thought so.

3934. Did I not understand that you yourself were in favour of taking away the limit of the halfpenny rate?—Certainly; and I have been so for a long time.

3935. So you do not agree with your Board upon that point?—On the contrary, I think that the Board would be glad to get rid of the limit to the halfpenny rate.

3936. Is that consistent with what you have just stated, that the Board did not think themselves justified in asking Parliament to grant a Bill for new taxing powers?—I think it is an easy thing to have the desire, but yet not to have the feeling that you would be justified in going to the Government to ask them to bring in a Bill to grant you new taxing powers.

3937. But the responsibility lies upon the Board, after that Act was passed to protect life and property, to do their best for that purpose?—We have done so.

3938. If the Board felt that the means at their command were not sufficient for their purpose, and yet were deterred by a question of unpopularity, may we not say they were not fulfilling the responsibility which devolved upon them?—I do not think that I have admitted for a moment that the present fire brigade does not very fairly and efficiently cope with the duty of protecting life and property in the metropolis.

3939. Then upon that point you are distinctly at variance with Captain Shaw, who manages the brigade, and the evidence we have had with regard to the time which elapses before the engines can be brought to bear upon a fire?—I am very largely at variance with Captain Shaw, because I am quite sure that he will not be quite satisfied until he has 900 men. It will creep up by degrees. That is his ultimatum, and he will not be satisfied until he has arrived at that point, but I do not think it would be a provident expenditure of the ratepayers' money.

3940. Now, turning to another branch of the subject, I suppose your committee and yourself have considered that subject, which has been so much talked

talked about, of the pressure of the water and the application of hydrants?—Yes.

3941. Are you aware of the number of miles which has been shown in evidence, and from Major Boulton's report, to be under constant pressure at the present time?—Yes.

3942. Are you aware also that, upon those mains, no plugs are possible; that is to say, not the ordinary plugs?—I have heard it so stated.

3943. That the force of the water in mains fully charged at constant pressure is too great to render it possible that plugs should be applied?—I have heard so.

3944. You have had some experience, I suppose, with regard to hydrants?—I have.

3945. They are admitted to be good at Manchester?—Yes.

3946. Are you aware how the system is worked at Manchester?—Yes; I went down to Manchester and Liverpool.

3947. From the experience there, and the evidence of practical men, it is generally believed, is it not, that hydrants upon fully charged mains would give greater efficiency than the ordinary plug system?—That depends entirely upon the circumstances of the town, upon the largeness of the mains, and the constant and reliable pressure in those mains.

3948. Supposing those mains are under constant pressure, a hydrant makes the water in the mains more available for the purposes of the engines than the use of ordinary plugs, does it not?—I do not think that a hydrant is a particularly superior mode through which to draw the water, as compared with the plug and the dam. I believe that an engine would get a larger amount of water and as readily from a plug and a dam as from a hydrant.

3949. There would not be the same amount of waste by the hydrant?—No, there would not be the same amount of waste. I quite admit that, and that is the main difference.

3950. Hydrants would be possible upon all those charged mains upon which plugs are impossible?—Yes.

3951. Then there would be this further advantage as regards mains charged at constant pressure with hydrants affixed to them, namely, that all your brigade would be available as turncocks, because anybody could apply the water?—Yes.

3952. Are you aware that Captain Shaw has stated in his evidence that he is in favour of hydrants?—Yes, I heard it given as his definite opinion here for the first time. In the Fire Brigade Committee he has invariably given it as a matter of very small moment or consequence whether it was a hydrant or a plug which was adopted, unless there were an amount of pressure constant and reliable which would enable him to use the hose without the engine.

3953. That was at the time I suppose when the committee were considering the question after they had visited Manchester and other towns?—It has been so all through.

3954. Because at Question 177, Captain Shaw states in answer to this question: "Then in fact that points to the necessity for a constant supply rather than to fresh arrangements of stations and turncocks, or entrusting the plugs to the fire brigade. *A.* Certainly, I think so; it is most important as viewed from my point of view." I think from what you yourself stated, and from having read what Captain Shaw stated before this Committee, you are aware that having hydrants would enable the brigade to dispense with turncocks, and that it would be an advantage to the brigade in the way of extinguishing fires?—I believe he stated that.

3955. Are you aware that this question of the application of hydrants has been recommended by almost every Committee or Commission which has sat upon the question of the fire or water history of the metropolis?—Yes.

3956. And that it was recommended specially by the Committee upon the Water Bill of 1871, at the time that the word "hydrant," as well as "plug," was put into that Bill?—I have no doubt of it.

3957. You are aware that the evidence shows to the Committee that in this last year there have been many cases, I think 32 were stated, in which the present water arrangements have been found unsatisfactory under the present intermittent supply?—Perhaps so.

Mr. *R. Freeman.*
12 June 1876.

3958. That the water supply was in four cases deficient, and the turncock absent, or something happened so that the water supply was not available, as it ought to have been in the other 28 cases?—No doubt the facts are correct.

3959. I suppose there would be this advantage in the hydrant system on constant supply, that you would be able to avail yourselves of any extension of stand points or smaller fixed points where appliances could be stationed?—That would depend entirely upon whether you have a sufficient pressure to answer the purpose if you use the hose without the engine, and it would also depend upon the size of the main, and its ability to carry a sufficient quantity of water, and also whether you could rely upon the pressure. With the present small pressure, ever varying and not to be relied on, we have been advised that it would not be sound policy to put down hydrants and to rely upon them.

3960. When you say you have been advised, that means, I suppose, in the report of Sir Joseph Bazalgette?—Sir Joseph Bazalgette's report, and Captain Shaw's agreeing with that report. Mr. Bramwell, and Mr. Easton, who may be put into this chair, will, I think, give you scientific evidence to show that we should not have been justified in going to the large expenditure that would have been necessary for so very imperfect and irregular constant supply as we have in London. At Manchester the circumstances are entirely different. There they have two reservoirs at such a height and at such a pressure. The whole thing is arranged from the beginning; the size of the mains, and the various pipes leading out of them, that they can work it with the most perfect regularity, and can depend upon it at all times and under all circumstances, but here in London, I am not at all blaming the water companies, they have as commercial companies, I venture to think, done as much as you could possibly expect from them, but to get such a pressure as you have at Manchester or Liverpool you would require an enormous pumping power, and you could not expect commercial companies to go to the tremendous expenditure of taking up pipes which are already sufficient for their purposes, and to go to a large expenditure for engines, and so on, simply for the public good.

3961. That all seems to imply that in your opinion, as well as in the opinion of the Fire Brigade Committee, there would be no use in placing hydrants upon mains constantly charged, unless you were perfectly satisfied that the pressure was sufficient to enable you to supersede the use of engines?—That is scarcely a fair inference to draw from what I state. No doubt the hydrants would be a gain. No doubt they would be useful and beneficial to a certain extent; but the question is, whether looking at the very small number of deficiencies and the little inconvenience which takes place, would the Board as trustees for the public, and as representing the public, be justified in making the very large expenditure necessary under the circumstances for the small gain to which I point. It does not say that there will be no gain, and that the hydrants will be no use, but we have had to consider, after taking the evidence of Sir Joseph Bazalgette and Captain Shaw, whether we should be justified in expending the ratepayers' money for the amount of gain which would be attained by that expenditure. The cases of Manchester and Liverpool, as I said before, are totally different; there all is arranged by one mind; the pipes and mains are all dove-tailed together, and all of one compatible magnitude; the pressure is by gravitation; they can turn it on and work it just as they please, it being all under one control.

3962. But that all bears out what I have stated, that unless that constant pressure, and therefore that power of superseding engines, is arrived at, however much it was proved that it might facilitate the working of the fire brigade, and increase the facilities for extinguishing fire, the Board would not be justified, from a financial point of view, and that alone, in putting down those hydrants?—That is so, because we have been advised by Sir Joseph Bazalgette and by Captain Shaw, that the gain and facilities would be very small indeed. If they were large and considerable then it would be another question. We are still making the inquiry, and we should be glad to have high pressure, reliable as I have stated.

3963. But you have mains constantly charged with a high pressure at this moment?—Nominally, but not sufficient for our present purposes.

3964. Is that opinion founded on Sir Joseph Bazalgette's report?—Yes, and upon Mr. Easton's, and others.

3965. I ask

3965. I ask you that, because Sir Joseph Bazalgette's report is not of so conclusive a nature, or so satisfactory as it might be, because in that report he states that the experiments made were not of so practical a nature as he wished, and that to make them practically useful he would have required to do many other things, namely, to have drawn large quantities of water for a lengthened period, which he does not seem to have done; therefore, reading his own report, one would hardly consider that the question of constant supply had been fairly tested?—We have been since that report constantly inquiring, and evidence certainly accumulates which confirms us in our view that, under the present circumstances, it would not be advisable to make the large expenditure that would be necessary. The company which I believe has done the most has the least pressure.

3966. Which is that company?—The East London Company; whereas I believe the New River Company has a very much greater pressure.

3967. But that has been the tendency of all the letters which have been written to the water companies in reply to theirs asking the Metropolitan Board of Works to adopt the hydrants, and place them upon the mains which were fully charged. Have not the answers always tended to show that the Board refused to do it because the hydrants, if put down upon the mains, would not supersede the use of engines?—We are advised that, unless we could get a pressure of a certain amount, and to be relied upon, that neither for extinguishing fires by the hose without the engine, or for obtaining the water with greater facility through the engine, would they answer the purpose.

3968. Did the Metropolitan Board of Works adopt the suggestion as to fixing hydrants on the mains of the Kent Water Company?—No, I think we did not fix any to any extent; we may have fixed a few experimentally, but not to any extent.

3969. Are you aware of the application that was made by the Kent Water Company in September 1873, when they called the attention of the Metropolitan Board of Works to the fact of their constant supply, and asked whether hydrants should be fixed?—I do not recollect that distinctly individually, but I have no doubt that the same evidence, or the same reasons, weighed with us then as have done since.

3970. At that time, on 11th November 1873, and again on the 15th November 1873, a correspondence between the Board and the company led to the placing of 30 hydrants, did it not?—We had been very anxious to avail ourselves of the constant supply if possible, and we may have made some experiments.

3971. Are you aware of that experiment?—I do not recollect it at this moment.

3972. You were not present at the trial of those hydrants?—We went to Rotherhithe to try some hydrants, but that was more with the idea of selecting the best hydrant that could be selected; we had then very great hope of being able to select hydrants, and to use the constant pressure.

3973. But this hardly bears out what is said in the correspondence, because this follows upon the water company giving the Board notice, in September 1873, of their having completed the constant supply, and asking the Metropolitan Board of Works for instructions with reference to fixing hydrants; and then, on 2nd October 1873, before the two months expired, the Board asked for an extension of time, so that the matter was deliberated upon by the Board. There was an application for a withdrawal of the notice given for a time, and then, on 11th November, the company were unable to withdraw the notice, and the Metropolitan Board of Works then directed that 30 hydrants should be affixed, and this work was executed upon the 7th of August 1874. Captain Shaw and certain members of the Metropolitan Board of Works went down with the secretary of the company and the engineer to test these hydrants. That was of course with the view of seeing whether hydrants affixed to a constant supply system were efficient for the purpose of extinguishing fire; it could not be with the view of testing the different kinds of hydrants, because they are all the same kind of hydrant applied to different pipes?—I have been only to one experiment, and that was certainly when we tested the kind of hydrant we should use if we did use it. I do not recollect the experiment to which you refer.

3974. You are not aware that the Board, after they had ordered the placing of these

Mr. *R. Freeman.*

12 June 1876.

these hydrants upon the mains charged with constant supply, went down, and that the experiment before them certainly showed, if the statement is correct, a very great power in the hydrants?—But would not that be very easily accounted for; of course the company would know that the Board was going down to make the experiment, and the engine power would be increased to any extent, hence there would be those results of pumping.

3975. But the statement is made that the pressure gauge showed 50 pounds pressure?—The question is whether that is the constant pressure of the company.

3976. That is upon their mains so charged; whether that pressure was constant or not it does not state, but according to Captain Shaw's statement that was sufficient for the requirements of the brigade; nevertheless, nothing further has been done since that experiment?—No, I believe not. I feel quite certain that if we had arrived at the conclusion that there was a constant pressure upon those pipes sufficient to work the hose from the hydrant without the engine, we should not have hesitated a single moment.

3977. Mr. De la Hooke stated that a number of the members of the Board were present, and that they would be able to explain it?—I was present at Rotherhithe at one experiment, but I recollect that we went down there to test the kind of hydrant which should be used.

3978. Therefore you were not present at this one to which Mr. De la Hooke referred?—I can hardly think so.

3979. At Question 3360 Mr. De la Hooke was asked, "You stated that after the Board had made the experiment of putting down these hydrants they had found that the advantages arising from them would not justify them in continuing to put them down; as I understand, that was the purport of your evidence;" to which he replied, "Yes;" so that it was with the view of putting down hydrants, and not with the view of testing different kinds of hydrants, that this was done?—I could not pretend to recollect whether there were two experiments or not; my impression is that there was only one, and that was the chief object in going down.

3980. But that experiment, according to Mr. De la Hooke's view, was with the view of seeing whether the application of hydrants to mains charged with constant supply should be proceeded with?—Yes; but as the company knew that we were coming, and the high pressure could be put upon the main, it would not follow that the same pressure would invariably be ready for our service.

3981. Now, going to another subject, namely, the possibility of police assistance to the Metropolitan Fire Brigade, has your committee ever considered the possibility of availing themselves of the police?—Yes; we have thought on many occasions that the police might give their assistance, and that there might be a working together of the brigade and the police, but we have never found Captain Shaw at all ready to enter upon any arrangement of the kind. He almost invariably protested against divided responsibility, and has never shown the slightest inclination to work with the police in any way.

3982. I suppose you are aware that in America they avail themselves of the police very largely?—Yes, and at Manchester also.

3983. And at Liverpool, I believe, the police are the fire brigade?—I do not recollect exactly whether they are one body or not.

3984. Has that point ever occurred to you upon which I asked another witness, whether it would be advisable to utilise the stand-points of the police which are being established throughout the town where a policeman is generally, and might be permanently fixed, as additions to your fire brigade stations, and to connect them telegraphically with your stations?—I think if those two bodies worked cordially together it might be of great use and great avail.

3985. Practically, that would be establishing what Captain Shaw originally recommended many years ago, namely, the establishment of a certain number of small stations?—Excuse me, these contract stations, we believe, would be utterly useless. What Captain Shaw recommended were small contract stations. A contract station would be under some tradesman or mechanic who, by his journeymen, apprentices, and so on, would have to work it. We believe that that would be an utter failure, and would answer no good purpose at all, and could not be relied upon.

3986. But

3986. But what I imagine Captain Shaw then wanted was to increase the number of fixed points throughout the town at which calls to fires could be made, and from which certain appliances could be brought to bear upon a fire if it broke out?—But if there were no one at that point to be relied upon to take the appliances, it would be of no value for the call to go there.

3987. But supposing the stand-points for your policemen were made as Captain Shaw recommended, points of call for the fire brigade, and had telegraphic communication with the fire brigade stations, the man on duty there, after calling out the reserves of police, and the nearest brigade, could take any appliances which were fixed at that stand-point at once to the scene of the fire?—No doubt.

3988. And might, under a system of constant supply, bring the water to bear upon the fire almost as soon as it arose?—No doubt.

3989. You think that would be a system which might tend very much to diminish the necessity for increased fire brigade stations throughout the town?—I do; I think that they would be very useful supplemental assistants.

3990. From that point of view you think the Fire Brigade Committee of the Metropolitan Board of Works would encourage the idea?—Certainly, and we have encouraged it, and also the utilising of the volunteer brigades; but I must say that on this point we have not been able to induce Captain Shaw to cordially co-operate.

3991. Are you prepared to speak with regard to the question of the superannuation, or is it another member of the Board who wishes to give evidence upon that point?—I can speak generally upon that point.

3992. What have been your views, and the views of the committee, when you were chairman of it, with regard to the question of superannuation?—My view, individually, is, that there should be some plan of superannuation. I might, in justice to the Board, say that there has been a considerable difference of opinion. I might say that one or two of the clearest heads upon the Board have thought it a far better system to pay the men fairly and well, and to encourage habits of thrift and self-reliance by their providing for themselves as to rainy days, or retirements from the service. I have been of the opposite opinion. I think when these men enter our service for life, and when they follow a somewhat dangerous occupation, a system of retiring allowances is a very fair and proper one to adopt.

3993. I suppose one of the first principles with regard to a force of this kind is to keep your men as long as they are efficient?—Yes.

3994. And you are of opinion, as I gather, that the advantages of deferred pay under a superannuation scheme are very great for that purpose?—I think the statement made here by Captain Shaw that all the men who have left have done so in consequence of there being no superannuation, and that we have lost to the public 60,000 *l.*, is the wildest and most exaggerated statement ever made.

3995. You are aware that the men have stated, from their own personal view, that there would be a great inducement to them to remain in the force if they felt that after having joined, and after having contributed themselves for a certain time, they would, when discharged or worn out, or inefficient from ill health, receive something they could count upon to provide for their old age?—Of course the men are wishing to get it, and make such statements as would help them to get it, but we must take the statements as true, to a certain extent.

3996. I suppose we must take it for granted that the men in the police and other forces are anxious to get superannuation?—It is a thing which I believe is quite right should be established, and which, I believe, will be established.

3997. But the advantages of it from your own point of view are, that whereas an increase of pay is a thing which a man gets accustomed to in a very short time, and therefore leaves as freely under that as he does at present; if he has to look forward to the future for a superannuation allowance, that is something which keeps him in the brigade, because he is loth to leave until he has got what he is entitled to after a term of service?—It is something of course, but this statement that 600 men have left the brigade in consequence of there not being a superannuation allowance, and that 60,000 *l.* has been lost to the country, is a startling and extraordinary one to me.

Mr. *R. Freeman.*

12 June 1876.

3998. Mr. *Ritchie.*] You mentioned that Captain Shaw stated that it was in consequence of there being no superannuation fund that all these men left. Can you refer to any answer of Captain Shaw's which points that out?—At Question 926, Captain Shaw was asked: "So that if they were all fully trained men, the loss of 640 men would seem to imply a loss of about 60,000 *l.*"? to which he replied: "Yes, that is what I have always put it at." Now, we have always thought that one reason for the men leaving was because Captain Shaw invariably insists upon selecting them from sailors. We all know that young men going to sea are of a somewhat fickle mind and disposition.

3999. In the evidence you have quoted Captain Shaw does not state that the men left in consequence of not having superannuation?—Captain Shaw is asked, "Has the want of this" (that is a superannuation fund), "and the amount of excessive work which the men had to do, led to many resignations in the force?" to which he replies, "Yes, I think it has."

4000. You stated that it was in consequence of the superannuation fund not being settled?—I recollected imperfectly the effect of his evidence; but put the two together. Captain Shaw selects these young men entirely from sailors at his own desire and his own will. Now I think it is only fair to suppose that these young men, who have gone to sea and got tired of the sea, and have been fickle and come home again, and taken to this monotonous and tiresome service, would also get, to a certain extent, tired of that, and a certain number leave upon that account. Then bear in mind that we have made the raw material into an expert, when a hundred pounds has been expended upon him, and vast numbers have gone away to fill better positions. Go to Manchester, and you will find the head of the brigade there from the London Fire Brigade. Go to any town in the kingdom, and you will always find men from the London Fire Brigade filling more important positions. They have been educated and made experts by the training in London, and then they have obtained far better positions, with more remuneration, elsewhere.

4001. *Chairman.*] Would not that rather strengthen the advantage of having a pension attached to their present pay, which would be an inducement to the men to remain with you, instead of going away and volunteering into other brigades?—It would after the men had been in the brigade for a considerable time, but not at first.

4002. You say these men go away as experienced men; that implies a certain amount of service?—But I take the younger men. If they are tolerably well educated, twelve months' training makes a good man, and the higher pay they get elsewhere, which takes place immediately, would not be overcome and superseded by the chance of a retiring pension at the age of 60 years.

4003. Then it comes to a question of what sort of a superannuation you yourself think would be advisable. You have mentioned the age of 60 years; is that age a period which you think ought to form a part of any superannuation scheme?—Yes; I do not think that we should be justified in making it a shorter period than we should with the police.

4004. But you are aware, are you not, that at this moment that is the one great grievance of all the police forces in the country?—I was not aware of that. I should like to put the fire brigade upon a similar footing with the police; they are a very similar body.

4005. You mean with regard to the metropolitan police?—Yes, I mean with regard to the metropolitan police.

4006. That would be a system of superannuation very similar, with the exception of the period of 60 years, to what the men are asking?—Yes; individually I should yield the $2\frac{1}{2}$ per cent., and that and another point would have been yielded if the men had asked for an interview, and stated their differences.

4007. Practically, the differences between the men and the Metropolitan Board of Works are very small?—Very small; and if the men had only asked for a conference, instead of rejecting the scheme in the summary way that they did, I believe the differences would all have been settled, and I may say that I believe the bulk of the men rejected the offer of the Board, not knowing what they rejected.

4008. Probably the men rejected it from their experience of one or two previous propositions?—I am aware that the matter was too long delayed.

4009. And the men have a distinct objection to the age of 60 years being fixed as the limit of service?—Yes, that they have a distinct objection to.

4010. Upon the ground that, after a given number of years' service, a man should become entitled to superannuation, and that the fixing of a certain age was unequal in its operation upon men who enter at different ages?—Yes; I cannot say that we should be justified in fixing a settled period, if the Government thought that a different system was right for the police.

4011. I should like to ask what your opinion would be, as representing the committee, as regards men lodging at stations?—We are very anxious to have all the men under one roof, if possible, and we are doing it as much as possible; the first stations which we built were not so large and commodious as we should have liked, because of our crippled circumstances. We had only this 33,000 *l.* of capital wherewith to build the stations, and we were obliged to do as we could.

4012. At that time, I believe, a resolution of the Board was moved, that it would be for the advantage of the brigade that the men should be housed within the stations?—Yes, I moved the resolution myself.

4013. Since then a very large number of stations have been erected, and that recommendation has not been carried out?—As far as possible it has, and almost to the utmost; we went to Paddington, and you would agree that it would be very difficult to meet all the circumstances of that case; there are six men under that roof, and six weeks before that there were 20 children belonging to them; it is very difficult to provide for men marrying and increasing in that way. We provide for averages, but unfortunately you cannot always forecast the future so accurately as that.

4014. You do not advertise for men without incumbrances?—No; on the contrary, we like them to be married men; they are steadier, and so on.

4015. You think that it is the opinion of the Fire Brigade Committee that it would be decidedly to the advantage of the working of the system if you could get your men all under the roof of their stations?—Yes, on all grounds it would be better, and I should like to enlarge all the present stations.

4016. With regard to the head-quarters station in Watling-street; what have you to say with regard to that?—That is a very difficult subject to deal with.

4017. That has been under the consideration of the committee, has it not?—I may say that the committee have considered Watling-street a good spot; it is a central and good spot.

4018. It is rather awkwardly situated, is it not, for getting the engine out?—Yes, it is too much confined; the leases are running out; the longest lease I believe is 30 years. In order to sell that to any advantage it becomes necessary to do that now, if at all; run it out to the length of the lease of the other house, and it is good for nothing. We have had it valued, and I think the architect reports that it would probably sell for 10,000 *l.* or 12,000 *l.* Then we have been looking everywhere for a spot whereon to put a central station, but the difficulties are enormous; the two spots to which Captain Shaw has pointed were worth 50,000 *l.* each for the land. One spot the Government were to have given 50,000 *l.* for to place the Mint upon.

4019. That was upon the Thames Embankment?—Yes, near Waterloo Bridge; the other spot was equally valuable and would produce 50,000 *l.*, and that is bare land, and then you have to put all the house for Captain Shaw, which he tells us will want 20 or 25 rooms. You have to put workshops and a drill-ground, and all the appliances, and I think that the estimate of our architect for doing that which Captain Shaw pointed out as being necessary was about 30,000 *l.*

4020. I suppose that there would be great advantages in getting your drill-ground and your machinery, and a place for making your appliances under one roof?—There has been always rather a difference of opinion between Captain Shaw and the committee of the Board with regard to these workshops. Captain Shaw on his own account introduces these workshops and employs a certain number of men without any wish or suggestion from us to that effect; therefore, if he were so restricted for men, and they were so hard-worked, and everything

Mr. R. Freeman.
12 June 1876.

of the sort, as he states, I should have thought that, as the manager of the whole brigade, he would have scarcely introduced fresh duties and drawn off these men for the sake of the workshops; we have always held this opinion that there should be a contract with the maker of the engines to keep them in repair, and do everything. We very much question whether there is this saving in making sailors into painters, and carpenters, and engine makers, and everything of that sort. Whether there is not quite as much waste of material, and so on, as there has been gain.

4021. That would be shown by your accounts, would it not?—It would be very difficult to show it.

4022. If that was the opinion of the committee, and the committee are practically supreme in this matter, why have they not carried out their own view?—Because we have yielded to Captain Shaw upon the point; he has been clearly of opinion that it was a gain. We have not wished to interfere with his regulating and managing the whole thing, and have yielded to him everything that we could, but we have never been clear in our opinion that this was a saving, or that it was a sound policy.

4023. Does not he in one of his reports point out that there is a distinct saving?—Yes, he does; the account shows it as far as that goes, but we are not clearly of that opinion.

4024. I suppose you admit that another head-quarter station might be chosen which would be better situated for the protection of the town itself, and for regulating the whole of the working of the system, than the present one?—There is no doubt that a larger space of ground in which all could be drawn into a focus, and all arranged under Captain Shaw's eye, would have many advantages, and if it was not such a tremendously costly thing in the centre of London, we should only have been too glad to have done it before.

4025. It was stated by Mr. De la Hooke, in his evidence, that the Board were, at this present moment, examining a site upon the south side of the river?—Yes; one of the members of the Board brought to our notice a property which is in the market, and we are now considering it, and negociating with regard to it.

4026. That is in the D division, is it not?—It is on the south side of the water, but that is not where Captain Shaw wants it, and I am not at all sure that he will be satisfied when he gets it.

4027. I suppose one of his principal objects in wishing that the site should be upon the river is that he should be close to his steam flotilla?—Yes; and it would be very desirable if it were not for the costliness of the thing, and the very great difficulty in getting it.

4028. I think his report suggests that there should be a pier at which the steam engines could lie, so that they might be available at all times of the tide?—If the Board of Conservancy would allow it. I do not know whether they would. They have the regulation of the Thames.

4029. There is only one other point upon which I wish to examine you, and that is with regard to what Captain Shaw stated as a wish that he had, if he should obtain the increase of 200 men, to have a power of re-arranging the numbers of men in the various ranks so as to encourage the men by quicker promotion; has that ever been under the notice of the committee?—I do not remember that Captain Shaw has ever brought that matter definitely before the committee; he may have mentioned it.

4030. He stated to the Committee that it was not possible with his present number of men, but that with an increased number of men it would be of very great advantage, as tending to retain men in the brigade if he could so re-arrange them?—But you must consider the consequences which would result from that; if all the fourth and third and second class men cease, you would have nothing but first-class men at their high pay, and of course the expenditure would be very largely increased.

4031. However, you would say that that has never been considered at all?—No; we should be glad to do anything that would be reasonable with regard to concessions, and so on, and with regard to promotion, which would satisfy and keep the men, and make the brigade efficient.

4032. I suppose, to summarise your evidence, you would say, as representing the controlling authority, that its duties are to minimise, as far as possible, fires, and

and that you believe that you are doing that by degrees; to keep a sufficient number of men in your brigade, and for that you yourself think that a superannuation scheme would be of advantage?—Yes.

4033. And may I go so far as to say that you think the fires ought to be stopped at the earliest possible period?—I do not think there can be two opinions about that.

4034. Therefore under those circumstances you think that any appliances, such as hydrants and constant pressure, ought to be used by the Metropolitan Board of Works, if it could be shown that they would bring to bear upon fires the means of extinguishing them more quickly than is the case at the present time?—And if the expenditure in order to obtain them would not be an extravagant one; that is to say, that it would bring an amount of gain in proportion to the outlay.

4035. You would balance it all by the question of expenditure?—Yes; I do not think as trustees for the ratepayers we should be at all at liberty to make such an expenditure as would not bring them back again in the shape of usefulness or any other gain.

4036. That is to say, should it be expensive, you think it would not be advisable to create such a system as would prevent fires altogether?—No; I do not think that is a fair inference altogether; if you can show that there will be a return in the usefulness of the brigade in its doing good in any proportion, we should be quite ready to make the expenditure, but it is when we are advised that after we have made the expenditure there will be no proportionate or adequate return, then we halt and hesitate.

4037. You want to be assured that these appliances will really attain the end expected from them?—That is so.

4038. Mr. *Ritchie.*] I suppose the question of the number of men is not to be regulated entirely by perhaps some amount of extra duty work, but as to whether a larger number are required for the safety of London?—Yes; that is to be taken into account.

4039. We have been speaking about the over-work of the men; there are other points besides the over-work of the men to be considered in regulating the number of the men?—Quite so.

4040. Do not you think that with the present number of men, the number available for the engines at night is dangerously small?—No, not dangerously small. I should like to add a few here and there, but I do not think the number is dangerously small.

4041. Have you heard the evidence that during some large fires not more than 30 or 40 men have been left available for all the rest of London?—Yes, there will be exceptional times, and exceptional cases, and unless you keep a tremendous establishment you will not be able to avoid this sort of thing, because, for instance, if the present number is not fairly adequate to two fires, and you increase it, then let a third fire take place, and your increased number will not then be adequate for the three fires, and so to provide against all contingencies you might go on multiplying and multiplying to I know not what.

4042. Of course all these cases can be carried to absurdity in argument?—Yes, and we think that we have arrived at the happy medium.

4043. Do you think that you could adequately cope with two fires like the Pantechnicon and the City Flour Mills, at one time?—Yes.

4044. Do you know how many men went on duty at the Pantechnicon?—I do not know the exact number.

4045. How could you expect to be able to cope with both those fires at the same time?—Because you would draw men for one fire from the West-end, and for the other from the East-end.

4046. Captain Shaw was asked at Question 658, "How did you get men for the fire at the Pantechnicon?" to which he replied, "At that fire there were 110 men left at home available in the various districts, and we had to send out 177 men that night on fixed duties;" and in order that those duties should be fulfilled they had to withdraw men from the Pantechnicon; do you think that that is a desirable state of things in a great city like London, that one fire should so overstrain the limit of the men available as not to leave enough men

Mr. *R. Freeman.*

12 June 1876.

behind them to perform the various duties?—It all depends upon what those duties are; here no idea is given of what the duty is; if it is simply to keep watch at home, that could be done by somebody besides the firemen.

4047. Does not it require some one with a knowledge of telegraphic instruments?—If the men had gone, and, as I suppose the engines had gone, it would be of no use if the engines were gone.

4048. You mean to say that it would be unnecessary to keep open the stations, because if a fire occurred you would have neither engines nor men to send?—I do not say that, but I say that as a general rule it could be done as I described; but there will be exceptional circumstances, in which, unless you keep such a tremendous staff, you cannot avoid being brought into an emergency of this kind now and then.

4049. Now I ask you as Chairman of this Board, whether you think it a desirable state of things that one large fire should cripple the brigade, so as not to enable Captain Shaw to provide in addition to the number of men at the fire sufficient men to man the fire escapes, and to keep open the stations?—If it were the fact I should not think it desirable.

4050. We may take it as a fact, because Captain Shaw states it?—But it does not follow that all these men at the fire were absolutely necessary; if there were any real necessity a portion of them might have gone to another fire.

4051. I understood you to state at the commencement of your evidence that the Fire Brigade Committee left the entire management of the brigade to Captain Shaw, who had the entire control of the executive with respect to discipline, and the arrangement of the men and stations?—Yes.

4052. I would ask you with regard to that answer, do not you think that Captain Shaw is the best judge with reference to the number of men whom he required to be on duty that night?—Yes, to a certain extent he is.

4053. Then, supposing that Captain Shaw is correct in that answer which he gave to Question 658, in which he stated that when the fire took place at the Pantechnicon he had to send out 177 men while the fire was going on on various duties, and that he had only 110 men left at home to perform those duties. Supposing that answer to be correct, it would certainly show that an increase in the brigade is necessary?—I have said several times that I should wish to have a certain addition made to the brigade.

4054. I think that I may take it that you have been always on the side of liberality upon your committee?—Yes.

4055. But unfortunately you have sometimes not been supported in your views?—You must not ask me to turn Queen's evidence if you please.

4056. Have you not yourself made propositions more than once which have not been adopted?—Propositions are often made which are not adopted at first, but they are carried out in the long run. In the House of Commons you have to debate things before you carry them.

4057. That is in the nature of things in managing things by a committee?—Yes, managing them anyhow, unless you have absolute control of the funds and resources.

4058. In pursuing that question with reference to the number of men, do not you think that when the brigade comes to be reduced to 110 at night for all London, that is a state of things which requires remedy?—I do not think that because upon a particular night in the whole year the brigade was not altogether in a satisfactory state or condition, you should so augment its force that two-thirds of its force would be wasted throughout the rest of the year.

4059. But supposing that to be the ordinary state of things, do you think that that is not sufficient; you have already stated that?—I am quite willing to add to the brigade to a certain extent.

4060. I think you stated, with regard to Captain Shaw's scheme for re-arranging the various grades, that all the men might become first-class men ultimately, and that that would be an objection?—I do not know that I have sufficiently studied his proposition with regard to that point.

4061. I quite agree that that might occur, but do you know the pay of a first-class fireman?—Yes.

4062. What is that?—Five shillings a day.

4063. Do you think that it would be a very disadvantageous state of things that

that men after serving six years, which is the earliest time at which they might come into the first rank, should receive 5 *s.* a day?—It is large pay.

4064. For those duties?—It is large pay, considering that they have medical attendance provided for them; that they have clothing provided for them; that they have lodgings provided for them. All those things added would make the 5 *s.* a day a considerable amount. Recollect that we are not spending our own money; we have the ratepayers' money to spend.

4065. Have all the men lodgings provided?—First-class men have lodgings; if they pay anything towards them it is a very small proportion.

4066. Do you know whether they do pay anything?—We found at Paddington that men who were excluded under our rules were living under the roof, or having lodgings provided, namely, third and fourth class men.

4067. I am not speaking about engineers or officers?—No, I am referring to firemen.

4068. You do not know whether they receive lodgings?—My impression is that the first-class men receive lodgings, making a very small payment; they only make 2 *s.* 6 *d.* payment towards their lodgings if they have a wife and family.

4069. Some of them have to live out of the stations?—Yes, they do.

4070. And then it is not so advantageous?—They pay only 2 *s.* 6 *d.*, and we make up the difference.

4071. But you were speaking about the married men just now. In the case of a first-class man, if he does not live at the station, he lives out, and pays something?—He pays only so much to the Board and we pay the rest; therefore, whether a man's lodging costs him 1 *s.* or 1 *l.*, it does not cost him one penny more.

4072. Therefore, I understand you to say that, whether a man lives in the station or out of the station, it is immaterial to him in a monetary point of view, because, when he lives out of the station, you make up the money that he is out of pocket in consequence?—Yes.

4073. You still think it would be a disadvantage that the men, after serving six years, should come into the first class, because they would obtain a higher rate of pay?—It would be a great advantage to them, and a great advantage to us, if we could afford it, and if it were justified according to the labour market, that we should pay such wages.

4074. We will not take it upon the ground of whether you could afford it or not, but whether you would be giving too much in giving a man 5 *s.* a day after six years' service?—I think that it would be too much, looking at the labour rate of the market, and I do not think that we should be justified, as trustees of public money, in paying an exceptionally high rate of wages for labour.

4075. But do you think that 30 *s.* a week for six days in the ordinary labour market would be too large a price for those duties after a man had been in the brigade for six years?—Certainly not, the money for the work; but there are all the allowances to be considered; there is the man's lodgings and his clothes. With regard to an engineer, we reckon that his allowances over and above his pay amount to 15 *s.* a week, and to a certain extent that holds good with regard to a first-class fireman.

4076. But engineers do not pay for their lodgings at all, do they, whereas the firemen do?—No; I say that to a certain extent it holds good.

4077. It is 5 *s.* a day for seven days?—Yes.

4078. Saturday and Sunday are the same to them?—Yes; but they could go to church with the greatest possible ease if they liked. We found that out at Paddington. We said to the engineer, Would there be any difficulty in two or three of your men going to church in the morning, and two or three in the evening, and he said that there would be none whatever, provided he could rely on their going to church.

4079. We have had Paddington mentioned so often, that I should like to know whether you went to any other station besides Paddington?—Yes; we went to four stations.

4080. What stations were those?—Paddington, Fulham, Chelsea, and Kensington, and we had the same evidence at each.

4081. I see Chelsea has eight men, Paddington eight men, Kensington seven

Mr. *R. Freeman.*

12 June 1876.

men, and Fulham five men; did you find the relief from labour as great as Fulham as you did at Paddington?—I was not able to go to the Fulham Station; I went to the others; I came down to this Committee on that day.

4082. It would have been a little different if you had picked out some of the stations which were not quite so well manned as those you have mentioned; there are some with a much smaller number?—But the smaller ones have fewer fire-escapes.

4083. Is it not the fact that at the large ones they have, perhaps, more engines?—Yes, but they always borrow men of each other when they require it. One man was gone from Paddington.

4084. Do you think that that is a desirable thing?—But we cannot help a man committing an offence and having to be suspended, and another man being borrowed to supply his place, as was the case at Paddington.

4085. Did Captain Shaw go round with you when you went round?—No.

4086. Mr. *Forsyth.*] Did you give notice of your going, or did you go quite accidentally as it were?—We went quite without notice. We wished to ascertain the real state of things.

4087. Mr. *Ritchie.*] With regard to the man you found upon station duty who had to sleep with his belt and boots on, you seemed to think that if he had his boots and belt off he might be able to enjoy a good night's rest?—Yes, I believe these men get very soon accustomed to sleeping in their clothes.

4088. They have to attend to the telegraph, have they not?—Yes, if they are called.

4089. How is that intimated to them; does some one intimate to them that there is a message?—No, they sleep just near the bell, and they wake in a moment.

4090. They always have to be alive to the telegraph bell?—Yes.

4091. They sleep very lightly on night duty, I suppose?—I do not know that.

4092. Are the men punished if they do not hear the bell?—I have never heard that that is so.

4093. This bell rings, I suppose, for other things besides large fires, does it not; do you know whether it rings for a chimney fire?—I daresay it does.

4094. So that in some stations the bell may be pretty frequently rung sometimes?—It may be, but it is not according to our inquiries. We were informed of the number of calls at those various stations, and they did not amount to anything like perpetual ringing, or even frequent ringing in the night.

4095. That was at Paddington?—Paddington, Kensington, and Chelsea.

4096. You suggested rather that it would be better if the men who had been upstairs should go on to the cleaning of the engines, and that the three men returning from the escape duties should go to rest?—Excuse me. When we got there, one man was on duty with the engine, and the other three men had done their work in cleaning the engines; they were taking their rest upstairs. I said, with a view of relieving the men and preventing 36 hours of consecutive labour, that when the men come off duty from the fire-escapes at eight o'clock, instead of putting them on to cleaning duty, they should go upstairs and rest.

4097. And not clean the engines at all?—No; there would be four men to clean the engines.

4098. You would suggest that the men who had the night's rest should be the men to clean the engines?—Yes; but I suggest that the engine would not take the least atom of harm in not being cleaned every morning.

4099. But I suppose the fire brigade is like the army, that the greatest importance is attached to everything being bright and soldierlike?—Beyond what is necessary, I think; but what I put was an alternative; that rather than work the men to death, or into sickness, I would let them go upstairs.

4100. Did the Board receive a petition from a man named Wheeler, in which he stated what were the reasons which induced him to leave. I have a printed copy of the petition addressed to Mr. Thompson, chairman of the Fire Brigade Committee; do you recollect whether that was put before the committee?—I do not recollect whether that individual paper was put before the committee.

4101. I wished to draw attention to it specially with regard to the over-work of the men, and the want of superannuation as reasons which caused them to leave.

leave. (*A paper was handed to the Witness*)?—I do not remember having seen that.

4102. You stated that you did not think that the gain to the ratepayers would be sufficient to authorise you in incurring such a large expenditure as that which was shadowed out by Captain Shaw?—No, I do not think it would.

4103. And also with regard to the alteration in the ranks, you made that same remark, I think, that it would cause a great expense, and that you did not think the gain would be sufficient?—No, I did not say anything about the gain in reference to that. I said that it was the first time Captain Shaw had raised the suggestion; that considerable consequences would follow from the re-arrangement, and that I should like to consider the whole question before I gave an opinion upon it. If it can be done with propriety, I should like to satisfy the men and give them quick promotion and make the brigade more efficient.

4104. Of course the question of rates is a very important one, and it is quite right that they should be kept down as low as they can be, but there is another question besides the saving to the ratepayers in the question of an efficient fire brigade, and that is, the prevention of great calamities such as might occur in London?—We have always borne that in mind, and endeavoured to keep the brigade as much up to the mark for all those purposes as possible, of course being limited by our income and our resources. I quite agree that money is not the only question.

4105. With regard to the question of superannuation, you said that the men rejected what they did not understand. What portion of it was it that they did not understand?—We put the question to two or three of the men and they really did not seem to know very much about it; they were told that it would not be satisfactory, it was not what it ought to be, and they were asked to sign the paper which led to the rejection of the proposition.

4106. Who asked the men to sign the paper?—A person who went round.

4107. Who was the person who went round?—The men were bound to secrecy on that point; they could not tell us the name of the person who went round.

4108. You asked the men?—We asked the men plainly whether they understood the superannuation scheme when they signed the paper which led to its rejection. The engineer, not a common man, told us that he believed that if he was to derive benefit from the scheme he should have to pay out of his own pocket an equal sum to that which was in the hands of the Board, entirely misunderstanding the operation of the scheme itself, and that answer, and two or three others, showed to us that the thing had never been properly placed before the men, but that they had been got to reject it.

4109. Was not that misunderstanding a very natural one, looking at the words of the scheme?—I do not think it was. At any rate, I think the men would have been much wiser to have asked for an explanation, if there had been anything which did not satisfy them.

4110. Clause 4 is the one to which they take exception: "Every man's service shall, for the purposes of this scheme, date from the day of the scheme coming into operation, but he may become at once entitled to have his service reckoned from the time he joined the brigade upon payment as follows: If he joined since the 5th July 1865, of a sum equal to the amount standing to his credit in the firemen's savings fund; but if he joined before that date, of a sum equal to the amount put to his credit since 1865, together with 6*d.* for every week of service prior to the 5th of July 1865"?—But I am referring to an engineer who was in the service long before 1865, and it was his impression that he would have to make this payment before he would derive any benefit from the fund.

4111. What is your interpretation of that clause?—That it would certainly not apply to the man I am speaking of, an engineer, who had been in the service of the brigade for 20 or 30 years.

4112. If he joined since the 5th of July 1865, he would have to pay a sum equal to the amount standing to his credit in the firemen's savings fund; that is to say, if he had an amount of 20 *l.* in the firemen's savings fund he would have to add another 20 *l.* to it before he would be entitled to superannuation?—Certainly not; no such idea ever entered the mind of the Board.

 4113. I only

Mr. *R. Freeman.*

12 June 1876.

4113. I only wished to show that upon first reading there is some room for doubt with reference to what the real meaning of it is?—I am not at all saying that no such doubt might have existed, and hence the necessity to ask for an explanation, or a conference, or something of the sort; but to turn it from them and to say they reject it *in toto*, did not appear to us to be the mode of arriving at anything like a satisfactory conclusion.

4114. Mr. *Forsyth.*] The words are, if he joined since the 5th of July 1865, "a sum equal to the amount standing to his credit in the firemen's savings fund." Now that might possibly mean that if there was 20 *l.* standing to his credit, he might have to pay another 20 *l.* to make 40 *l.* towards his superannuation?—Quite so; I do not deny that there was some room for misunderstanding, but I say that, without understanding it, the men rejected it, and without seeking for an explanation, and the knowledge which they could have obtained with the greatest possible ease if they felt inclined.

4115. Mr. *Ritchie.*] The Board, I suppose, did not ask for an interview with the men?—They did not ask for it. The communication was sent on the Friday, and the answer was sent early in the next week.

4116. How did they get possession of the scheme?—That I cannot say. It was never officially communicated to them; the rejection took place in the most summary manner, before the official communication took place.

4117. However, you think it would be fair to meet the difficulty by basing it on whatever is finally settled for the metropolitan police?—My own opinion is, that without pledging myself to every detail, I should like to have it about on the same footing as the police superannuation system,

4118. Did you hear Captain Shaw say that if he were able to get assistance from the police, as indicated by the honourable Chairman, he thought that all the number of men that he would require would be 200?—I heard him say that, and I was surprised to hear it.

4119. But he went a little further than that; he went so far, did he not, as to say that he was not at all sure that it would not be a better arrangement than his old request of 930 men?—I did not hear that, but if he did I should be still more surprised, as it was the first time I have ever heard any suggestion from Captain Shaw of the kind, although I have heard many protest against divided responsibility.

4120. However that may be, Captain Shaw seems to think that that would be a good way of getting rid of the difficulty?—I think that the suggestion made by the honourable Chairman of having various points at which you might have appliances conveyed by policemen understanding the business, and able to be relied upon, would be a great assistance to the brigade. And I think further, that there are five or six volunteer fire brigades which might be worked into this brigade and do much good, and we have tried that, but unfortunately Captain Shaw does not like them.

4121. Do you say that the first engine which came to the fire at the Pantechnicon was a volunteer fire-engine?—It was.

4122. Do you know whether they found any difficulty with respect to the length of their hose?—I do not recollect the details.

4123. You say that there was no complaint from Captain Shaw with reference to the late arrival of the engines there?—I do not recollect any. I have his report, in which there is no mention of anything of the kind.

4124. Does his report show what time the engine arrived?—It does not say a word about it.

4125. You stated that you could not see how anything could be saved in the way of fire insurance premiums to the population generally by making a more efficient brigade?—I said that I did not see how the theory of reducing the premiums paid to the insurance offices from 700,000 *l.* to 400,000 *l.* would work.

4126. You took it upon this ground, that you would still insure, even though there were a more efficient fire brigade; therefore you did not see how there could be a saving in that respect; but if you could insure for 1 *s.* instead of 2 *s.*, that would be a saving, would it not; if, in consequence of reduced risk, the insurance companies could reduce the premiums by 50 per cent., you would go on insuring, but there would be a saving, would there not?—Those are all

assumptions, and I have no reason to think that any insurance office would intimate any such reduction to me.

4127. But your only comparison appeared to be between insuring and non-insuring; I put it to you whether the insurance offices might not reduce their premiums upon increased facilities being given for extinguishing fires?—I believe the number of serious fires is now reduced to 8 per cent.; and upon the probability of the number being reduced still further, I see no likelihood of the fire insurance companies reducing their premiums in the way you describe.

4128. A fire may still be a serious fire without increasing the loss to the insurance companies?—I beg your pardon, the fire insurances like to have a few fires; it does their business good; otherwise, if there were no fires, people would not insure at all.

4129. But they would like to reduce the losses to a minimum?—But it might almost come to this in the end, that the fire insurance offices would be looking for compensation if we took away all their vested interest, and made such a brigade as rendered insurance unnecessary.

4130. The more they can moderate the serious nature of the fires, the more moderate their lossess?—That is just what I think the present fire brigade does; it keeps it down as nearly as possible to the minimum, and if you had the brigade twice as large and twice as powerful, you would not decrease the destruction of property by fire at all to an extent to compensate for the cost of the institution.

4131. You do not agree with Captain Shaw when he says that serious fires might be still considerably reduced?—I do. I think they will still be considerably reduced as we add more stations and increase our power from time to time, and make the brigade able to cope with the various cases. We have a great number of new districts springing up, and it is necessary to provide for them as well as for the old ones.

4132. Then your answer goes to imply that the more you increase the efficiency of the brigade, the more you diminish the serious nature of fires?—Yes, up to a certain point; but if you go to extravagance you turn the corner, which leads to loss.

4133. There has been some talk with regard to whether it would be the best policy to continue this brigade under the present management, or to transfer it to some other management; have you heard that question discussed?—I have not heard of that since it was reported upon by a Committee of the House of Commons. I think that that was in favour of the police, but the Government of the day decided against that, and I have not heard any particular discussion or agitation about it since then.

4134. You are not aware whether any proposition or suggestion has been made at various local boards that such a scheme was contemplated?—I have seen in one or two cases that there has been a petition against the management of the brigade being removed from the Metropolitan Board of Works and given to the police.

4135. I suppose one of the grounds mentioned as objections to the Board would be taxation without representation?—I can hardly say that that is so.

4136. Is the Government represented upon the committee?—No.

4137. How much do they contribute?—Ten thousand pounds.

4138. Are the fire insurance offices represented upon the committee?—No.

4139. What do they contribute?—Thirty-five pounds upon 1,000,000 *l.*

4140. So that, as far as the Government and the fire offices are concerned, representation does not go with taxation there?—That rests with the Government. We did not draw the Bill.

4141. You will admit the facts?—I should not wish to dispute your facts.

4142. I should like to have an answer, as a matter of fact, whether that were so or not?—The fire brigade exists largely for the benefit of the insurance offices.

4143. I thought you stated the contrary just now?—No, I stated that they existed for the benefit of the insurance offices in keeping down fires to moderation, but that if they went further and prevented fires altogether that might be injurious to the business of the fire insurance companies.

4144. Mr. *Hankey.*] Do you mean to say that fire insurance offices have made

M. *R. Freeman.*

12 June 1876.

more profit since there were fewer fires in London; did you ever hear that they had?—I do not know anything about their accounts, but I know that at the time the transfer took place the fire insurance companies felt unequal to the work, and that they were assenting parties and promoting parties to the brigade being made more efficient under the Metropolitan Board of Works.

4145. Mr. *Ritchie.*] You will excuse me, but you have not answered my question. I asked you whether taxation and representation went together upon your committee, so far as the insurance companies and the Government are concerned?—I look upon those contributions more as voluntary contributions to a body who are to do certain work, and good for the two parties; we protect the Government property upon the one hand, and we also protect the general property which is insured in those offices, upon the other; they therefore become voluntary contributions to the institution which is to render those services to those two bodies.

4146. Do they not contribute by Act of Parliament?—Yes.

4147. And therefore it is not voluntary?—But they were voluntarily parties to the Bill originally.

4148. But you have not yet answered the question as to whether they have any kind of representation, as far as the spending of their money is concerned, on your Board?—I do not consider it a taxation or a rate; it was a voluntary offer incorporated in the Bill, and has remained so ever since.

4149. Whatever you may call it, the Government and the insurance offices do contribute very largely, and are not represented upon the Board?—There is nobody representing them upon the Board.

4150. Would you be inclined to recommend that there should de some representation given to the insurance companies on the Board?—I have never considered the question; it is the first time I can ever recollect its being suggested, but I should not agree to the statement that it was similar to taxation and representation; I think it is a totally different state of things.

4151. You do not agree with the evidence given in 1862, that the protection of life and property from fire in the metropolis is as much a matter of police as the protection of life and property from burglars and thieves?—I think that we have an efficient brigade under the Board for everybody's advantage; I know that the general public are satisfied with it, and I should not be inclined to recommend a change for the mere sake of change.

4152. Do you believe that the brigade is conducted as economically under the Metropolitan Board of Works as it would be under the police?—I think it is quite so; I see that it was remarked the other day that under the old proceeding it was an honorary committee, and so it is now by the Board; the members of the Board receive no pay; there is not a shilling spent upon the brigade, except to such officers as are necessary; true we pay a per-centage of the Board's establishment charges; the proportion of these charged to the brigade amounts to 1,700 *l.* I think, but there is not a shilling wasted in any way; it is simply a fair payment for work that is done for the service.

4153. But does not the brigade have to bear a proportion of the whole establishment charges of the Metropolitan Board of Works?—Not unless it receives actual service.

4154. Do you know what the establishment charges are?—£. 1,700 for the brigade.

4155. Are you prepared to speak with reference to any portion of the accounts?—I have not looked through all the details, but there would be so much for the architect's department which has to do with the obtaining of the land and putting the buildings upon them, and everything of that kind; there would be a certain portion to the accountant's department, or to any department which rendered actual service.

4156. May I ask what are included under the items of incidental charges, because they amount to as much as the establishment charges?—Incidentals include stationery, printing, travelling, and petty disbursements; those include all the stationery and everything we supply to Captain Shaw upon requisition, which amount to very large quantities; all the books and all the appliances of every kind.

4157. So that the two charges, the main charges and the incidental charges, come to between 3,000 *l.* and 4,000 *l.* a year?—They are chiefly consumed and

and received by Captain Shaw for carrying on the brigade at the various stations.

4158. You mean that that 3,000 *l.* or 4,000 *l.* is chiefly consumed by Captain Shaw and his brigade?—The whole is only 1,700 *l.*

4159. But there are what are called main charges, and incidental charges?—I should say that by far the greater part, indeed, all this 1,700 *l.* of incidentals, are supplied to Captain Shaw upon requisition from him. He sends up a requisition every fortnight.

4160. And in addition to the 1,700 *l.* of incidental charges, there is a similar sum for establishment charges?—Yes, and as I have said, that goes to the accountant's department, the solicitor's department, and the architect's department; and in short any department which renders actual service, and to nothing else.

4161. You were the first chairman of the Fire Brigade Committee. Can you give the Committee the amount of income, and the amount spent during the first few years, specifying the wages separately?—I know that after the first year or two we have spent up to the hilt every year. We have had nothing to spare, but have sometimes gone a little into debt, and exceeded the estimates.

4162. In the year 1866, when it was first started?—The first year, when we were getting to work, and so on, I could not speak to. I know, in the first six months we doubled everything; the number of men, the number of engines, and the number of appliances of every kind. Whether we spent the whole of the income the first year or not I could not say, but I know that we did it with the greatest possible rapidity, due caution being used, and that in all the years we have spent the incomes from the halfpenny rate, income as well as capital, up to the utmost farthing, and that never, to the present year, have we formed an estimate giving us any balance. I am not referring to the first year or two, because that was when we were getting into working order.

4163. There were balances the first year or two, were there not?—I could not charge my memory with regard to the first year or two as to the exact figures, but what I mean is, that we have spent, up to the uttermost farthing, all the income that was placed at our disposal for fire brigade purposes. This year will give us 5,000 *l.* or 6,000 *l.* more, and we shall be able to do something beyond what we have done hitherto.

4164. Have all the expenditures which have been made for capital account been carefully put to capital account?—The auditor from the Treasury will take care of that.

4165. Did you contemplate having to support the fire-escapes from your income?—Not at first.

4166. When did you contemplate first taking them over?—In 1867.

4167. Was there nothing before then?—I really could not charge my memory with the exact time. It came upon a representation from the Society for Protection of Life from Fire suggesting that we should take them over.

4168. Were you not a member of a committee which had the matter under consideration very early in 1866?—I have no doubt I was. The matter was first mooted in 1866.

4169. Was there any resolution of the Board with regard to referring it to a committee to consider the matter?—The Main Drainage Committee considered the matter, and came to a resolution that they could not do it.

4170. They came to a resolution that they could not do it unless they had more taxing power?—Yes, a larger income.

4171. I should like to have the Report of the Main Drainage Committee upon the question in February 1866. Will you read it?—This appears to be a report of the Main Drainage Committee, and I brought it up as chairman. It was presented on the 9th February 1866: "Your committee have had under consideration the question of the advisability of the Board organising a system for the protection of life from fire within the metropolis, in connection with the fire brigade, together with the letters from Mr. Low, secretary to the Royal Society for the Protection of Life from Fire, and other parties on the subject. The protection of life from fire has hitherto been effected by the operations of this society, which is dependent on voluntary contributions, and it appears probable that the various parishes of the metropolis, and other parties who have hitherto contributed towards its support, will now withdraw their contributions, and, in-

Mr. *R. Freeman.*

12 June 1876.

deed, many of them have already given notice of their intention to do so. It becomes, therefore, important that some course should at once be determined on by the Board for establishing a system for the protection of life from fire, in accordance with the expressed opinion of the Board. The annual outlay of the society which now exists for this purpose is about, 8,000 *l.* or 9,000 *l.*; but considering that the area under the jurisdiction of the Board is so much more extensive than that over which the operations of the society have been conducted, no doubt can exist that the establishment of an efficient system by the Board would involve a larger outlay. The expenditure of the Board in carrying out the Fire Brigade Act is limited to such sums as can be raised by a halfpenny rate, together with the contributions of the fire insurance companies and the Government, amounting in the aggregate to about 50,000 *l.* a year, and it appears to your committee that the whole, or nearly so, of this sum will be required for the working of an efficient system for the protection of property. In the event, therefore, of the Board determining to establish a system for the protection of life from fire, it will be necessary to obtain from Parliament further taxing powers. Your committee, looking at the great importance of the subject, and the responsibility devolving upon the Board in respect thereof, under the Fire Brigade Act, deem it advisable that the Board should lose no time in establishing a system for affording such protection, and that application should be made to Parliament for the necessary taxing powers. Your committee beg to recommend that course for adoption, and that it be referred back to them to take all the steps which may be deemed desirable for that purpose."

4172. So that there at least it is shown conclusively, first, that it was not contemplated that you should have charge of the fire escapes with the same amount of money, and I think that it was the opinion of the committee that they should go to Parliament for further taxing power, they thinking it necessary. Can you tell me what course was adopted upon your taking up that report?—The opinion of the Board evidently was that it was not advisable to go for further taxing powers, and that they should endeavour with the increased capital, getting rid of the burden upon the halfpenny which was done afterwards in 1868 and 1869, to do their best to carry on the two.

4173. But your recollection was not very good as to what took place with regard to that matter?—I was not referring to what took place on that particular occasion, but what was the practical result at the Board.

4174. I should like to know what was the practical result of that Report?—I moved the adoption of the Report, and an amendment was moved, "That the question be adjourned until after the proposed extension of the fire brigade be revised and adopted." The amendment having been put to the vote was lost. A further amendment was then moved by Mr. Phillips, and seconded by Mr. Richardson—"That in the opinion of this Board it is expedient that the system at present in use for the protection of life from fire should be supported by a contribution until such time as the Board can organise a system in connection with the fire brigade, and that a sum not exceeding 3,000 *l.* be paid to the society at present existing for that purpose." The amendment having been put to the vote, was declared by the chairman to be lost. A further amendment was then moved by Mr. Le Breton, and seconded by Mr. Freeman—"That the whole question with respect to the organisation of a system for the protection of life from fire in the metropolis, in connection with the fire brigade, be referred back to the committee for re-consideration and report. The amendment having been put to the vote, was carried in the affirmative, and having been put as an original motion, was also carried." That shows that the Board did not coincide in opinion with the committee, but referred the matter back, and that resulted in our endeavouring to carry on the two things with the income from the halfpenny rate, and from the Government and from the insurance offices, we afterwards applying to Parliament for modifications with regard to the capital amount.

4175. But there was no question whatever as to the capital, was there?—Yes, all the new escapes which had to be purchased; we had only taken a few over; there was a considerable outlay to be made for escapes.

4176. Would you have gone to Parliament, if it had been simply a question of the outlay of the capital; do you think the committee would have recommended the Board to apply for further taxing power?—The opinion of the committee

committee was undoubtedly that the income at the disposal of the Board was not sufficient for the two.

4177. In the result the Board took charge of the two establishments with the income which was originally intended for the one?—Yes, and I think they have done wonders with that income.

4178. I do not doubt that, but it is not a question whether they have done wonders so much as perhaps whether Parliament should give you power to do more?—Yes.

4179. And I suppose you have no doubt that if Parliament gave you power to do more the brigade would be rendered more efficient?—Yes.

4180. I believe you have suggested the possibility of there being more fire escapes. Do you think that the number of men spoken of by Captain Shaw, namely, 200, is more than sufficient to work the fire escapes with the additional number which would be required?—My own opinion is that it is a large addition, but I can only say that if the restriction to the halfpenny were removed, and it were really shown that 200 more men were required, I should not hesitate to add them to the brigade, but I am not clear at the present moment that it does require so large an addition as that.

4181. Have you formed any opinion as to the number of men you think might be added advantageously?—That would depend upon the number of new stations that were put down at once; we shall have an additional income of 5,000 *l.* or 6,000 *l.* this year, and we shall be able to supply some new stations and to meet the additional working charge out of the present income.

4182. It appears from that answer that you are quite at variance with Captain Shaw with reference to the number of men, because the basis upon which he rested his number of men, namely, 200, was that the stations should not be increased; he said it would require 200 more men to work the existing stations?—My impression is that that is an extravagant estimate; at the same time I am quite ready to add as many as are necessary.

4183. The answer of Captain Shaw with regard to the number of men is contained in Question and Answer 1003; Captain Shaw is asked, "With your present number of stations and engines, what increase of men do you consider necessary to work them properly?" to which he replied, "I think, without increasing any of our duties at present, either our fixed watches or our duties at fires, that by adding 50 per cent. to the existing force we should be in a perfectly satisfactory condition with regard to the total number." I understand from your answer generally that you do not agree with that estimate?—I would say generally that I think that is an extravagant estimate.

4184. Would you mind answering this question; have you taken any steps to satisfy your own mind, not generally, but in detail, as to whether this number of 200 is extravagant or not?—I have frequently been at the various stations, and I have seen the work that is going on, and I have given all attention to the proceedings of the brigade at the committees, and I can only say that, having heard Captain Shaw's suggestion from time to time, especially that in 1868, when he calculated the number of men that would be necessary to make up his force to a comfortable working force, I do not see that 200 men can at the present time be required.

4185. But you have not gone in detail into the matter?—I scarcely know what you mean by detail.

4186. Captain Shaw says that he does not arrive at this number of 200 roughly; he has gone into the whole calculation as to the increase of the number of men he should like at each station; he says: "The precise calculation would be either 196 or 198"; and then somewhere else he says, "I have not at all roughed it at 50 per cent., but it happens to come to about that"; he proposes to have "a chief officer's assistant, two superintendents, six superintendents assistants, who would be additional, 12 firemen added to the head quarters station, when a head quarters is established, six men added to each superintendent's station, that would make 36, and three men added to each of the remaining 47 stations, making 141, which would make a total of 198, which happens to be 50 per cent. on the existing force"?—Elsewhere Captain Shaw has expressed the other opinion that, to make this force what it ought to be, the number of men ought to be over 900.

4187. But that is with regard to a much larger number of stations?—There is nothing before the Board to show that.

Mr. *R. Freeman.*

12 June 1876.

4188. *Chairman.*] In the same scheme it is set out that the fire-engine stations should be increased to 169, the fire escapes to 200, and the fire engines to 330, the number of men to be 931; that was in the report of the 14th October 1872?—There is no doubt that Captain Shaw differs distinctly from the Board upon the policy of having such a number as that.

4189. But you see that that number of men contemplates an increased number of duties?—Yes. With regard to the increase of 200 men, I should very much like to go into the matter much more fully with the new central station, if it should be erected, and so on, before I pronounce any opinion upon the exact number of men requisite. My impression is that at the present moment, without having the central station, 50 men additional would enable the brigade to work with the greatest possible ease; possibly, if you had the new central station, 100 additional men might be required, if Captain Shaw is to have an assistant there.

4190. Mr. *Ritchie.*] Do you know how many men were originally estimated for by Captain Shaw for the 50,000 *l.* a year?—I forget the exact number at this moment.

4191. I may tell you that it was 350 men, and, after deducting the fire escapes, of course you have not anything like that number of men at present?—No.

4192. Do you know how many men are required to work the escape portion of the duty properly?—There are 105 or 106 fire-escape stations.

4193. Do you know how many escapes there are?—There are about 120.

4194. Do you know how many men Captain Shaw estimates that it takes to work the fire escapes properly?—Captain Shaw, I believe, would like two men for each escape; our suggestion, I believe, is three men for two escapes.

4195. Three men for two escapes would give you 150 or 160 men wanted for the escapes?—But they do not go out with the escapes every time; the firemen help them to take the escape out, and then one man is with the escape and the other comes home. It is Captain Shaw's own theory to have the escape men and the fire brigade men all one body, and therefore they work together, but there are not three men for every two escapes out all night.

4196. What I understood from Captain Shaw was that altogether, apart from running the escapes out, it took three men to work two escapes properly, off and on duty?—Yes, but they want one out of the three left for duty at the station, supposing there were an emergency or a call.

4197. Supposing this Committee were of opinion that the brigade should be enlarged, have you any recommendation to make as to how the money should be raised?—I should say, take off the limitation to the halfpenny.

4198. Would you put the additional cost entirely upon the taxpayer?—I should have to speak in the presence of the Government, and the representatives of the fire insurance offices, I am afraid.

4199. It is a very important question, and one which has doubtless occupied your attention?—We shall be pleased to have a larger contribution from the Government, and a larger contribution from the insurance offices.

4200. Have you not formed any idea where the money should come from?—Considering the very great benefit which we confer upon the insurance offices, we think that they will probably volunteer to increase their contributions.

4201. But if they do not volunteer, would you propose that it should be all taken from the taxpayer?—Unless the Government can help us to a better source.

4202. Mr. *Onslow.*] I think the whole gist of your evidence is diametrically opposed to the evidence which Captain Shaw has put before the Committee?—Not diametrically opposed; upon some points I differ from him considerably, but to say that my evidence is opposed to Captain Shaw *in toto*, I do not admit.

4203. In what do you agree with him?—I admit that the fire brigade is a very efficient brigade.

4204. But, as far as I can understand your evidence, you stigmatise his evidence as wild, and you have also called it exaggerated, and you also stated that he has not in some cases acted cordially with you. I should like to know in what part of his material evidence you do agree with him, because that is a very important question after the way in which you have stigmatised his evidence?—"Stigmatised"

"Stigmatised" is a very severe word, and one which I should have thought would never have been applied to the terms in which I have criticised his evidence.

4205. I understood you to state that he had never acted cordially with you?—No; I said that we had never found Captain Shaw willing to act cordially with the police. I said that he had always protested against a divided responsibility. I also stated that I thought his statement very extravagant, that the 600 men had left solely from the want of a superannuation allowance and the hard work, and that in consequence of that there had been wasted to the public 60,000 *l.*; that I own I consider a very extravagant statement, and I am quite prepared to prove it.

4206. You stated that your idea of the reason why men left the service was on account of its monotony. Are you aware that the Committee have had evidence before them to the contrary, given by practical men, who have assured the Committee that the service is very popular; is it a theory of your own; you surely do not know that the men leave from the monotony of the service?—I have heard from one or two that Captain Shaw's discipline on the one hand, and the monotony of the service, they could not stand, after coming from the sea.

4207. Your evidence is opposed to the evidence which we have had before us?—You had the evidence of the men who have remained; not of those who have gone away.

4208. Not of those who have gone away, but we have had the evidence of men who have told us that the service is popular?—What I mean by extravagance is just this: Captain Shaw states that 600 men have gone away from the two causes he mentions; upon which you are to assume that if those two causes did not exist he would not have lost a single man during the whole of the time that he has been over the brigade, and that this 60,000 *l.* ought to have nothing deducted from it for those who would have left under the most perfect system in the world. I say that having spent 100 *l.* upon each of those men has made them fit for higher positions and higher pay; and a large number have left for the higher positions which have been offered them, and also there is the fact that they have been all sailors to be borne in mind, and we know that young men who have been to sea are of a fickle mind and character. Having been to sea, they are tired of that, and having gone to the brigade they get tired of that. All I wished to do was to protest against its going out to the public that in consequence of our treatment of the men the 600 have left, and the 60,000 *l.* have been wasted.

4209. I suppose you wish to stand by your statement that you think that one great reason why the men leave the service is on account of its monotony?—I should calculate that the monotony of the service, and the strict discipline of the service, would drive a certain portion away.

4210. Are you aware that there were at one time 1,000 men on the list waiting to enter the force?—I cannot say that I know of my own knowledge that there was such a large number as that; but I imagine that the number of uneducated young men for service of that kind has decreased everywhere very largely. You may have fifty clerks if you advertise for a clerk, but to get common-place ordinary labourers is not so easy as it used to be, or it was not a year or two back. We are now coming to troublous times, and perhaps they will be more numerous.

4211. Are you aware that the list has entirely disappeared at the present time?—Yes, I daresay it has, and largely, because Captain Shaw will confine the selection to one class; he will have nothing but sailors, whereas I have no doubt that a considerable number of most active young men would go upon the list if it were not restricted to that one class only.

4212. Mr. *Locke.*] What reason does Captain Shaw give for that restriction?—That sailors are more easily trained, and more used to climbing in difficult places.

4213. Mr. *Ritchie.*] Have they not been alway sailors upon his list?—Yes, I believe so.

4214. Mr. *Onslow.*] You have had some experience in this matter; you think that the brigade might be made just as efficient with recruits drawn from other sources besides the sea?—My impression is, that serviceable and agile young

Mr. *R. Freeman.*

12 June 1876.

men would be trained for the service very readily from other sources. There is nothing so very marvellous to acquire.

4215. Are you aware of any large town in England of any importance where the proportion of the fire brigade in relation to the population is as small as it is in London?—I cannot say that I have instituted comparisons.

4216. You do not go so far as to say that your present brigade is sufficient for the whole of the metropolitan area?—No, I should like to strengthen it somewhat. There are several places where I think stations should be put the moment we can add them, both fire-escapes and fire-engine stations; and now that we shall have an increase of 5,000 *l.* or 6,000 *l.*, I have no doubt that we shall proceed to have them, even if we do not get the limitation removed.

4217. As regards your head station, on the whole, would you rather see it on the north side of the Thames than on the south?—I would rather have it on the north if a plot of ground were available.

4218. Have you ever brought it to the notice of Captain Shaw that the Board thinks he expects too much from his men?—No, we never interfere with his discipline over the brigade.

4219. But still you think so; you have stated so to-day?—I was so startled by the evidence given here that a few of us thought it right to inquire for ourselves and ascertain the facts, and I simply state that I believe that if Captain Shaw were inclined several modifications might take place which would prevent this work from falling so heavily upon the men, as has been stated. When the fire-escape men come in in the morning very tired and very exhausted, having had previous duty, I should be inclined to send those men up to bed and let the four or five men in the station do the cleaning of the engines and what was necessary; it would only take them an hour longer, and if I were in his position I should feel that it was a pity to press upon these men merely for the sake of keeping up a routine iron sort of proceeding.

4220. But still you, as connected with the committee, have never expressed your opinion to them in the way you have done it here to-day?—We have never had Captain Shaw's opinion expressed to us as it has been expressed before this Committee. It was to meet the one that I expressed the other.

4221. Still you know that men are leaving very rapidly?—Yes; we have been working to get this superannuation scheme matured, and we have been doing what else we could.

4222. The Board has never suggested to Captain Shaw that they think the reason for their leaving is on account of the severity of the discipline?—No, we have never held that opinion so strongly as Captain Shaw himself, and consequently there was no reason for our suggesting it to him; we preferred not interfering with the discipline, as otherwise we should have incurred considerable responsibility.

4223. Captain Shaw has given us different reasons from those you have given us to-day. He stated that one of the reasons for leaving was that there was no superannuation allowance; he never suggested that the men left because the discipline was too severe, whereas you have stated to-day that that is one of the reasons in the view of the Board?—That is one of the elements leading to the men leaving, but it would not account any more than any other one reason would for the whole 600 leaving. A number of reasons go together to make up the sum total. As I said before, the men are made experts; a certain number go to situations; a certain number leave because of the monotony and the discipline to which they have not been accustomed, and others for various reasons. All that I object to is putting down the leaving of the 600 men to these particular reasons, and then stating that we have wasted 60,000 *l.* of the ratepayers' money in having so acted.

4224. Have the insurance offices ever asked you for an increase of the force in any particular place?—The insurance offices have suggested that we should add to the river some small vessels, and we went and held a conference with a committee appointed by them; we rather inclined to the suggestion made by the insurance offices; we thought it a reasonable and good one, and from that day to this we have been endeavouring to obtain the kind of vessel which would be of real service, namely, a vessel drawing only a few inches of water, so as to be able to run in and begin work quickly, in order to stop a fire in its inception. Captain Shaw's view was that it would be impossible to get such a vessel, and that

that the only way of accomplishing it would be to have a flat-bottomed barge with a steam fire engine upon it, and a tug to draw the flat-bottomed barge. Some members of the Committee and others thought it would be possible to get upon one deck all that was needful without having too great depth of water. We have been trying it; Shand & Mason, and Merryweather have been all designing and endeavouring to get such a vessel, and at last we find that it is impossible to get such a vessel, and that we must adopt the flat-bottomed barge with a tug.

4225. *Chairman.*] That formed one of Captain Shaw's recommendations to the Board, did it not, that they should have a certain number of those flat-bottomed barges and tugs?—Yes, he quite fell in with that suggestion; indeed, I am bound to say that Captain Shaw has been quite right in the long run. His opinion that the flat-bottomed barge and the tug would be the only vessel that would be useful is quite correct.

4226. Mr. *Onslow.*] Do you think at the present time that the river is sufficiently protected from fire by the existing force that you have at your disposal?—If expense had nothing to do with the question I should like to have three or four times as many, but I think it is fairly protected, and with these small vessels I think it will be very well protected.

4227. With how many added?—I think four or six is the number that we propose, but with regard to the docks you will bear in mind that they have very large forces within themselves; they have great power of meeting and of extinguishing a fire, and they have provided for their own protection very largely, which cannot be quite left out of the calculation when you are talking about adequate protection for the river and the river-side.

4228. But if you agree that having four or six vessels added, the river would be adequately protected, you would agree that now the river is not sufficiently protected?—That is not the whole of the case; one reason for having these small vessels would be to save the tremendous expense of keeping these large floats with their fires always burning. By having these smaller vessels which shall run at once to the fire and begin playing upon it, it would be possible to let out the fires upon the large floats, not only saving the burning of the coals, but also the wearing out of the engines.

4229. *Chairman.*] All that was embodied in the recommendation of Captain Shaw, of the 11th of July 1844, to the Board, was it not?—It was.

4230. Mr. *Onslow.*] On the whole, do you think that the brigade, as manned at the present time, is worked harder than any other body of public servants; take the police, for example?—If you ask me whether I would rather be a policeman, to take his duties, or a fire-brigade man, to take his duties, without an atom of doubt I would infinitely prefer the service of the fire brigade to the police. A fire-brigade man has ample time to read his newspaper, and smoke his pipe, and make himself comfortable, and we are delighted that he should do so, and would give him more if we could.

4231. Sir *Henry Peek.*] If it be proposed to alter a station, are the public, or the insurance company, or the salvage corps, at all communicated with or consulted by the Board?—No, I do not think that we have ever applied to them. If they have made suggestions, or sent up suggestions, or remonstrances, or anything of the kind, we give all possible attention to it.

4232. They are not informed either of your intention of closing an old station or opening a new one?—We have closed but very few old stations, and we endeavour, after looking at the whole district, so to place the new ones as to protect the neighbourhood most adequately and efficiently.

4233. Captain Shaw was asked, "Have any of the old stations of the London Fire Brigade been closed?" to which he replied, "Yes." *Q.* "Several of them in rather important positions have been closed, have they not? *A.* Yes, some." Now, I want to know whether you closed any of them before you consulted the insurance companies, or the salvage corps, from whom you receive as much as 16,000 *l.* or 17,000 *l.* a year?—No, I do not think we have sent directly to them asking their opinion, but we have always considered any opinion which has been transmitted to us, or any suggestions which may have been made by them, with regard to the vessels upon the river, to wit.

4234. Was not it one of the conditions of the transfer that all the old stations should be maintained?—I do not think so, and I think if it had been the law

Mr. *R. Freeman.*

12 June 1876.

and the insurance offices had objected, they would have availed themselves of their legal position.

4235. Are there as many stations now near the docks and great depôts for goods as there used to be?—I could not say the exact number, but with reference to the efficiency and ability to cope with and put out fire, I should say it is much greater than it was.

4236. The companies agreed to transfer the whole of their plant, stock, and interest in the stations to the Board of Works free of charge, provided that the existing stations, plant, and staff be maintained as at present?—We have much more than maintained them as at present; we have in our judgment made them much more efficient, but of course that sort of preliminary arrangement in an agreement was never embodied in an Act of Parliament, and therefore it fell to the ground; it was not a part of the Act of Parliament constituting it a right upon their part.

4237. Captain Shaw was asked at Question 598: "The Whitechapel one and the Wellclose-square one were abolished and a new one built in the immediate vicinity of the Whitechapel one"; to which he replied, "Yes, quite so"?—It was in the new street. The Whitechapel one was in a little place with one small engine.

4238. *Chairman.*] The Act by the 6th section says: "The Board may if they think fit purchase the stations, and fire-engines, and plant, belonging to any parish, place, body, or person"; that gave them the option of keeping up any stations or not; was not that so?—We took them over with the mortgage.

4239. Sir *Henry Peek.*] You took them over with the mortgage as a free gift upon the understanding that I have named, did you not?—No, there was no such understanding.

4240. Do not you think it reasonable that if you derive so large an income from the fire insurance companies, they should at any rate be informed of your intention to close old stations or open new ones, in order that they might have something to say upon the matter?—Our duty is to provide for the whole metropolis, and it does not follow that the interests of the insurance offices are exactly identical with the interests of the metropolis at large; we have to place all the stations in such positions as shall protect the whole of the property of the metropolis, and in doing so we do a great work for the insurance offices; but I think it would not do for us to sacrifice the interests of the public merely to oblige an insurance office.

4241. But do not you think that if you derive a considerable proportion of your income from insurance companies, you are to a certain extent bound to take that view, and that those parts of the town in which are stored many millions worth of property should be more cared for than those parts in which there are merely houses of comparatively little value?—We have always considered that. We have considered the docks very carefully and minutely; and to show that the dock companies have no very great anxiety about it, when we did away with those two stations in Wellclose-square and Church-lane, Whitechapel, we made an application to the dock company that if they could help us to a small portion of ground very near to the dock entrance we would put down a station there, or do anything that was requisite. We had no power to take the ground unless they would help us. They cared so little about it, our large station being so near, and their own appliances being so efficient, that they would not assist us.

4242. I was speaking of insurance companies, not of dock companies; do I understand from you that the insurance companies have made no representations to the Metropolitan Board of Works to the effect that they think that in the arrangements with the fire brigade their interests have at times been hardly sufficiently considered?—I think there were one or two representations touching that particular station, but I am not aware that there has been any representation of a general character, and I can only say that the Board does, in protecting the public and the property of the metropolis, protect the insurance companies; everybody is, or ought to be, insured; we cannot tell what is or what is not, but in protecting property generally most efficiently we consider that we are rendering the greatest service we can to the insurance companies.

4243. Do you regularly communicate with the insurance companies or with the Salvage Corps?—They receive a copy of the report of every fire which takes place;

place; we keep up a constant communication; this is one of the papers which go to them every morning (*handing the same to the honourable Member*).

4244. Those are made by Act of Parliament?—Yes, they are made by Act of Parliament.

4245. As to the means of spending a great deal of their money, you ask no questions, and you do not lay yourselves open to any advice from them?—Yes, we are open to receive any advice they like to give, and we give it the most careful consideration, and if we think it is advisable to attend to it we attend to it at once; but if we think it a suggestion which would clash with the public interests generally, we should be compelled to decline the minor for the major.

4246. Then I understand this, that no matter what considerations may be brought under the notice of your Board, or the committee of which you are so able a member, you do not think it any part of your duty, nor would it be to the public advantage to communicate the facts of the case, or the opinions which you have formed upon the case, either to the salvage corps or the insurance companies, before you come to a conclusion?—No; we do not communicate our intentions before we arrive at our decisions to those bodies, because we are responsible to the public, whereas those officers are not; and while we are most anxious to attend to any suggestion, take those vessels, for instance, that was their suggestion, with the recommendation of Captain Shaw, and we shall do the utmost we can to carry it out; but we do not report to them what we are about to do in order that they may advise us in each particular case.

4247. There was a question asked of Captain Shaw, No. 1111, "Do you think it would tend very much to the prompt extinguishment of fires if hydrants were established?" to which he replies, "I think it would"; but your opinion is not exactly so?—Yes, I should like to have the hydrants on every pipe that has high pressure, if it would answer to put them; but, as I have already stated, this is the first time I ever heard Captain Shaw express a definite opinion that the hydrants would be of much use in putting out fires. Generally speaking, when the Fire Brigade Committee have considered the matter, he has treated it almost as a matter of indifference. My opinion is, that unless we could have an efficient supply as to quantity, and the requisite amount of pressure, that pressure invariably to be relied upon, a state of things analogous, in fact, to that at Manchester and Liverpool, it would be of very little use in putting out fires, and certainly it would not be advisable to incur the very large expenditure which must be incurred in order to get the streets generally supplied; that the return of usefulness and profit to the ratepayers of the metropolis would not be at all adequate to the very large expenditure incurred.

4248. Do I understand that your Metropolitan Board of Works takes charge of the City proper with regard to fires?—Yes; the chief station is in the City.

4249. But there is no concurrent authority clashing with our authority within the City?—None whatever.

4250. Is it true, as I have heard it stated as a fact, that since this Committee was appointed and commenced its sittings, hydrants have been placed all over the City, so that no house in the City is more than 100 or 120 yards from a hydrant?—I have no particular knowledge myself, but I saw an advertisement in the newspapers the other day asking contractors to send in tenders for doing something of the kind. It cannot have been done at present, I think.

4251. Still you would not ask for tenders until you had decided that this plan of universal hydrants should be adopted?—But may I point out this, that the City is very fortunate in having a company going into it which gives double or treble the pressure of any other company. I believe that the New River Company gives a much larger pressure than any other company.

4252. Is the New River Company the only company that supplies the City?—I do not say that it is, but it goes very largely into the City, although from my own knowledge I do not know how the City is supplied in detail.

4253. *Chairman.*] In addition to that, I suppose the New River Company supplies a large portion of the district of the Metropolitan Board of Works as well as of the City?—Yes.

4254. Consequently the same pressure would exist in that part of the district of the Metropolitan Board of Works as does exist in the City?—Yes.

4255. Therefore, if hydrants are shown to be available in the City they might

Mr. *R. Freeman.*

12 June 1876.

be available in those other parts?—But the City is a very small circumscribed area, and that which would pay well for protection in the City might not pay at all over a thinly populated and scattered district, and where the supply pipes might not be so large.

4256. Sir *Henry Peek.*] But are you not condemning yourself now in talking of the large value of City property, when you rather pooh-poohed the value of the property about the docks?—I beg pardon, I did not pooh-pooh the value of property about the docks. I said that we had done all that we could do about the docks, and had requested the docks to assist us in getting a small piece of ground upon which to place another station, but that they, having faith in the great station in their immediate neighbourhood, and in their own appliances, did not assist us to get this piece of land.

Thursday, 15th June 1876.

MEMBERS PRESENT:

Mr. Clifton.	Mr. Locke.
Mr. Hankey.	Sir Andrew Lusk.
Mr. Hardcastle.	Mr. M'Lagan.
Mr. John Stewart Hardy.	Sir Henry Peek.
Mr. Hayter.	Mr. Ritchie.
Sir James Hogg.	

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

Mr. *Robert Freeman*, called in; and further Examined.

4257. *Chairman.*] ARE there any points which you wish to correct in your evidence of the last day?—Yes, there is one rather material point. I thought ourselves rather richer than I find we are.

4258. With regard to which question is that?—It is with regard to our having a margin of 5,000 *l.* or 6,000 *l.* in the coming year. I stated that two or three times, but I find that for the two previous years we have had a deficit; this is the first year that our estimate will be met by our income.

4259. That is the first year for three years?—The fourth year. We have expended beyond our income in the previous three years, and this increase of 5,000 *l.* or 6,000 *l.* owing to the increased assessment will just balance it this year. I mention this because I had hoped that we should have been able to have done something, whereas this makes it only the more material that some restriction should be taken from the halfpenny.

4260. Will you kindly tell the Committee what was the income and expenditure in those years, if you have got it before you?—The accountant is coming and he will give the Committee the exact figures.

4261. Till he comes we may understand from you that in 1873, 1874, and 1875, you have had deficits?—Yes.

4262. Over and above the amount of income produced by the 10,000 *l.* Government grant, the amount received from the insurance companies, and the amount produced by the halfpenny rate?—Yes.

4263. And that in the year 1875-76 the amount of expenditure and income about balance?—They just balance.

4264. And that, therefore, what you stated at our last meeting, namely, that the additional assessment would produce an additional amount of income which would give you greater means in the coming year, will not be the case?—It will not be the case.

4265. But if during the past years the expenditure and income balance, the additional amount that you receive in the next year surely will be an amount over that income which just balanced that expenditure?—But this year will be the first year for three years that the account has balanced; that the income will meet the expense.

4266. Do you mean calculating this probable increase?—That is taking the increase into account; taking it into account, we shall just balance this year the income and the estimate of expenditure.

4267. Then, if it had not been for the new assessment, and therefore the new increase of income, you would have had a deficiency of income again this year?—Yes.

4268. Mr. *Ritchie.*] Do you carry any deficiency of income in one year to the account of the next?—We are obliged to do so.

Mr. *R. Freeman.*

15 June 1876.

4269. Do I understand you that the income of 1875-76 will wipe out the arrears?—Yes.

4270. Then in 1876-77 your income will be more than your expenditure again?—If we stand still and do not increase our expenditure, it will.

4271. But I understand that it is not that the increased rates of 1875-76 will be all absorbed by the current expenses of that year, but that the current expenses of that year, plus the arrears, will wipe out the increased rates for that year?—The deficit and the increased expenditure will absorb the 5,000 *l.* or 6,000 *l.*

4272. *Chairman.*] And the accountant will be able to give the Committee the exact figure by which the expenditure and income will differ for the coming year?—Exactly so.

4273. Showing the additional balance of income in that way, that the Board will have to spend over their past income in any additions to pay or otherwise?—Yes.

4274. Mr. *Ritchie.*] In 1876-77 you will have 5,000 *l.* or 6,000 *l.* to spend towards any increase which is recommended; is that so?—I am afraid not, because we are each month ordering something new. We have just ordered a new station at Eltham, and we are just about hoping to conclude for a new central station, if the Treasury will help us to borrow the money.

4275. You will not have to pay the interest out of your income?—No, but there will be a large increased current expenditure.

4276. *Chairman.*] Do you mean an increased current expenditure arising from the increased number of men rendered necessary by the new large station?—Yes.

4277. Mr. *Ritchie.*] That will be an increase of the brigade?—Yes; that will be an increase of the brigade.

4278. *Chairman.*] But not an increase in the way Captain Shaw has suggested, because it will be an increase necessary to meet the larger duties imposed upon the men?—I think it will, to a certain extent, enable him to give a certain amount of relief, because he works the men all round now.

4279. Sir *Henry Peek.*] I think you stated that a good deal of the evidence given by Captain Shaw, with reference to the over work and under pay, was entirely new to you. That is your answer to Question 3896?—Yes, it was new to me that the men were being worked in the exhaustive manner that Captain Shaw described; and I may say that certain things had taken place before the Committee and the Board which would have led us to an opposite conclusion. For instance, when the great fire at Paris took place, Captain Shaw said he could send over 12 engines and 100 men. We inquired of Captain Shaw whether that would not be dangerous to the metropolis, and exceedingly inconvenient to the service. Captain Shaw's reply was, No; that it would not endanger the metropolis at all or inconvenience the service. That such was the organisation, and such the arrangements, that he could do it with ease and comfort. Then, on other occasions, men and engines have gone before sultans and emperors, and so on, and we never heard of any complaint upon that ground; therefore, I confess it did startle us to hear that men could not be spared to go to church, or could not be spared for a day's holiday, or anything of that kind.

4280. But when Captain Shaw stated that he could send those men to Paris, did he not also state that if he did he would have to hire men to do the duty which they ordinarily did?—Not a word of the kind; I do not recollect it; in fact, we could not credit Captain Shaw's statement at all, that he would be able to do without the men.

4281. *Chairman.*] When was that?—When the Communistic fire took place in Paris; I think it was in 1871.

4282. Sir *Henry Peek.*] Will you kindly refer to Question 715; that contains a petition, dated February 1874, in which, in very strong terms, it is stated that the men are severely overworked?—Yes, that is by the men themselves; and their

their object was to obtain a retiring pension and of course they stated their grievances as strongly as they could, and Captain Shaw himself admits that the case is put very strongly indeed,

4283. But no matter what their object was, the facts are broadly stated that the over work is excessive and very injurious to their health?—Yes; and I think I stated the other day that soon after that some of the committee went round to the stations, and the evidence which they collected, and the information which they gained, did not quite bear out those statements. We also went 10 days back, and then the inquiries we made, and the answers we obtained, did not bear out that statement. I do not want in the smallest degree to deny the irksomeness of the duty, and the tiresomeness of the duty. We wish to do everything we can, but it is a serious statement to make, that the men are so worked that they are brought into sickness and exhaustion, and into a shattered condition. I frankly confess that I should feel very unhappy and guilty if I had been a party to carrying on things in that style.

4284. Will you be kind enough to refer to Question 2472: "What are your hours of duty? *A.* Upon the float I belong to we have been 60 hours on duty very often. *Q.* Was it because you were short-handed on the float? *A.* Yes. *Q.* Is that a permanent state of things? *A.* Yes, it is." That is a statement of one of the officers named Kelly; that would argue, would it not, for over work?—I can only say that that was not represented to the committee that I recollect. But further, I cannot agree with the manner in which the word "work" is used; work varies very much. Now, to put themselves upon their lockers and sleep there all night is called work, because it is the watch, or to sit and smoke a pipe, or read a newspaper, is called work. I admit that it is tedious and monotonous employment, but it is not an exhausting, wearing, breaking-down kind of work; and I think if a man is occupied 24 hours you must consider what is the nature of the occupation throughout the 24 hours. I should never have dreamt of Captain Shaw putting a man to 26 hours' occupation.

4285. Will you refer to Question No. 2682, which contains a statement of another of the men. "What is the largest number of hours that you have been on duty yourself lately? *A.* I have been a whole week without having my clothes off. *Q.* Night and day for a whole week? *A.* Yes"?—On my honour I should be inclined to say that it was a very cruel arrangement for Captain Shaw to have made. I am quite sure that he had the means of obviating it; and if he had not, if he had told the Board such a circumstance, and had asked for a supernumerary, we should not have hesitated a moment in granting it.

4286. Now, I will refer you to Question No. 2752: "Do you mean to say that for a whole 24 hours you never go to bed at all? *A.* Not for four days and three nights; and then, if I get deprived of the night, I get deprived for the whole week"?—That is just what I stated the other day. If I had the management, instead of putting those men who come off night duty to cleaning the engines, I should send them up to bed, and let the four men who had been in bed clean the engines. It would take an hour longer it is quite true, but I do venture to think that it could be managed; and, in addition to that, I do not see the necessity of polishing and cleaning these engines every morning whether they have been out or not; that is to say, not when they are short-handed.

4287. I think you must be satisfied yourself that there is a great deal of overwork required from the brigade?—Yes, and if you will take away the restrictions from the halfpenny we will soon put it right.

4288. But I think upon the last occasion you said that, upon the whole, you thought, speaking generally, that there were men enough to do the work required?—No, excuse me.

4289. That is my impression?—I think, if you will look through my evidence, you will find I said that I would certainly add 50 men to the present stations

4290. You stated that you had been at the Paddington station, which I take it is one of the largest stations?—It is an eight-man station.

4291. And you found that the men could go to church regularly, if they wished to do so?—We put the question to the engineer in charge: "Would there be any difficulty in sparing two men to go to church in the morning and two in the afternoon"? He said, "No, there would be no difficulty whatever." The

Mr. *R. Freeman.*

15 June 1876.

junior man said, "If we could depend upon their going to church." Of course they would want to know that they were at church, so that if a call came they could fetch them immediately, but if they went for a walk, or went some where else, they would not be able to fetch them, and the same was stated at Kensington.

4292. Will you be so good as to refer to Question 2445; that is a question asked of Mr. Bull: "To take your case; you are permanently in charge; are you often able to go to church. *A.* No, very seldom"?—I have no doubt it would be more difficult to spare a man in charge, but that could be obviated by the next man being put in charge, and that runs through the whole brigade. Captain Shaw constantly tells us that his brigade is so organised and arranged that if one man is away another succeeds and takes command and sees to the duty, but I quite think that it would be much more difficult for the man in charge to leave than for the inferior grades, but that would not be obviated by adding an inferior man or two to a station; it might facilitate the inferior men going on leave, but it would not at all facilitate the going of the man in command.

4293. Then if the brigade were strengthened, the man in command would not be able to go according to that?—I should not say so, definitely; I should myself think that it could be arranged; but according to the present discipline and mode of working the brigade, I do not think it could.

4294. Now let me refer you to Question No. 2745; that refers to the men generally. Mr. Morris was asked: "And on Sundays, have the men to be on duty all day and all night. *A.* Sunday is just the same as Saturday to us, barring the cleaning; we do not clean any more than is necessary on Sunday; the duty is exactly the same otherwise"?—That simply means that one man is on duty, and all the rest are up-stairs, ready to be called if required, but they have nothing whatever to do; there is no engine cleaning, and no anything; they are up-stairs spending their time with their wives pleasantly and comfortably, I hope and wish.

4295. In answer to Question 3882, you told the Committee that the pay of the men had been increased, so that you believed they were perfectly content with the pay which they received?—I believe that is the effect of the answers which have been given by the men before this Committee.

4296. Now I will refer you to Question 733. Captain Shaw told the Committee, and it struck the Committee very much at the time; "There certainly has not been a rise. On the contrary, there has been a very great diminution for those first joining; but when they attain those upper ranks they do as well as they did before." That is not consonant with the statement which you have made?—I think the answers given by the men here were that if a superannuation allowance were added they were very well satisfied with the pay. That is as I have understood it. If I am mistaken, I should be very glad to have it corrected.

4297. That would be coupled with greater facilities of promotion?—I do not know that that was worked in. I have thought over the matter of promotion; I should be very glad to assist it. I think, to some extent, quicker promotion might be afforded. Might I add, that I believe I am right in thinking that the general answer of the men was, that with their pay they were tolerably well content.

4298. *Chairman.*] That was the impression left upon my mind, that with their pay they were satisfied, always guarding themselves by saying that they were not satisfied upon the question of superannuation; that did not apply to the superintendents?—Quite so. They are the superior officers, but I am speaking of the men.

4299. Sir *Henry Peek.*] The impression left upon my mind was, that the men were satisfied to receive in the future their present pay, plus the superannuation, and plus a quicker promotion?—I quite understood the superannuation, but I did not as distinctly understand the promotion to form part of the question.

4300. Will you refer to Question 2346. Mr. Duck was asked, "You said that your men felt that when they could not work there was only the workhouse before them. Do you mean to say that they are not able to save money out of their pay;" to which he replied, "No, they are not. I do not think there is one

man

man in the whole brigade who, if you were to call upon him now to produce 10 *l.*, would be able to do so." That does not argue much for contentment, does it?—That of course refers to the want of superannuation when they speak of the workhouse. With regard to the juniors, I am afraid that there are very few junior men in any occupation, commercial or otherwise, who are able to save money.

4301. But that refers to the whole brigade?—With regard to the superior grades I am sorry to hear it, because I think they might be able to save. Looking at their pay, at their privileges; no medical expenses, no clothing to provide, no lodging, except half-a-crown a week contribution, I cannot think they have particularly provident habits, if not a single one of the men has saved a 10 *l.* note.

4302. Addressing you as a prominent member of this Fire Brigade Committee of the Metropolitan Board of Works, I may assume, may I not, that you are certainly favourable to a scheme for superannuation?—Certainly.

4303. And that the matter may be even now under the consideration of the Board?—We have not liked to be officiously interfering with what might be the report of this Committee, but I believe that if this Committee should cease to sit, and we had an interview with the men, the question of superannuation would be arranged in a very short time, and it would have been already if the men had not taken what I call the unfortunate course of not waiting for an explanation, and not having an interview, because the battle was fought through the Board. The whole thing was settled by the Board; it only wanted negociation at an interview settling and modifying the terms.

4304. Then I need say no more upon the question of superannuation. I may take it that the Board are quite alive to the almost necessity of settling the question of superannuation?—Certainly.

4305. Would you consider that the scale of the metropolitan police would be a fair one to adopt?—I should like to put our scale as nearly as possible upon the same footing as that of the metropolitan police; I think it is a very fair one.

4306. I think you told the Committee that, in your opinion, the prevention and extinction of fires was a duty which, in the nature of things, depended upon your Metropolitan Board?—One of its duties.

4307. I think you also stated that, in your opinion, the insurance companies should be called upon to pay a little more than they pay now?—No, I do not think I expressed any opinion upon that point. The insurance companies increase their contributions in proportion to the increase of their business; and therefore I should say that, if the original sum was a fair sum, the present sum is a fair sum; it is not an *in statu quo* sum; it goes on with the increase of their business, and therefore I do not myself think that we have any particular claim beyond what they contribute at present.

4308. You quite agree with me, I presume, that the expense of fire-escapes has nothing whatever to do with the insurance of goods and houses in the metropolis?—No, I do not think it has.

4309. A good deal was said about accidents which have happened in the brigade; do I understand aright that each case of accident is decided upon its own merits?—Yes, it has been so.

4310. That you do not care for precedent, but would rather judge each case *per se*?—I think it is the best plan with accidents.

4311. Is that the usual course in other departments under your control?—Yes.

4312. I would only ask you one or two more questions, and those with regard to the extension of small stations; do you think that the extension of small stations where you only have three or four men is desirable?—Yes; I think there are many positions where a small station with three or four men would be very serviceable.

4313. I think you told the Committee that when a fire broke out it was not the engine of the immediate neighbourhood that went to it, but that they telegraphed to the various stations all round, and that each sent what force it could?—Excuse me; I said that the engine in the immediate neighbourhood went immediately, and commenced work upon the fire, but that a telegraph message was sent to all the other stations in the district, and that they sent engines as promptly as possible. As an illustration of that I may mention that we found

Mr. *R. Freeman.*

15 June 1876.

at Kensington that they had had only four original calls in the whole year, I mean to fires in the neighbourhood, but that they had had about 12 per month made up of the kind of calls which I have just mentioned, namely, calls from the chief station.

4314. You think that a number of small stations would be better than, say, one-third of the number of stations much larger?—No, I have not come to that conclusion, but I think that more stations of three or four men would be of great importance. We have just ordered one near the Herbert Hospital at Eltham, a station for the protection of the Government property, and to run down the hill for the protection of Eltham itself will be a very great service; there have just been ordered three men for the fire-escape and one for the fire service.

4315. Why I asked the question is this, that at Question 2018 we were told that small stations become powerless after one call, and at 2037 and 2044 we were told that they were not only powerless, but that they were actually shut up?—That is in case two fires occur at the same moment; the small stations are perfectly competent for one fire. When a call comes they are ready to go and extinguish the fires, but if there happens to come a second call to a small station there will be no man left, neither would there be an engine; you do not have more than one engine at a small station.

4316. But if the station were shut up, there would be no man to work the telegraph to tell the stations better off for men to go to the fire?—I quite admit that if a second fire did occur it is just possible; but we inquired at the Chelsea station, and were informed that there had not been a duplicate call at the same moment but once in five years.

4317. *Chairman.*] Supposing the first call had been from a distance to a small station, and taken away the engine and men from that station, shutting it up, and a fire occurred close by the station, to which it was the nearest station, the call-point would be practically closed for that fire, would it not?—That does not follow, because at these small places the wife is taught to attend to the telegraph, or, at any rate, could be taught to attend to the telegraph.

4318. Sir *Henry Peek.*] You say she could be taught?—I think that a vigilant officer would see that it was done. The ladies are very great experts in telegraphy.

4319. Will you refer to Question No. 2037; one of the men is asked, "At all the other stations in your district, I infer from what you say, when men are sent out with the engine only one man is left at home. *A.* In most cases that is so. Sometimes the station is shut up when the engine is out"?—That must be a very small station, and it would be a question between having a small station or none at all; and surely it is better to have a small station which can cope with usual dangers than to shut it up, because you would not be ready for this exceptional case which occurs once in five years.

4320. Still you think that it would be a very great improvement in these small stations if the man in charge had a wife able to work the telegraph?—Certainly; I think an active officer would put a man in charge with a wife who could attend to the telegraph.

4321. Sir *James Hogg.*] I believe that in 1866 the brigade consisted of 130 men, 17 stations, 9 steam-engines, land and river, and 27 manuals?—Yes.

4322. That is when the brigade was handed over to the Metropolitan Board of Works?—Yes, it was.

4323. I believe I am correct in stating that the brigade has been increased under the management of the Metropolitan Board of Works to 395 men, 52 stations, 30 steamers, land and river, 85 manuals, and 136 escapes?—Yes.

4324. I believe this has been carried out by means of a halfpenny rate, and contributions by the Government and insurance offices, and the borrowing powers which you have already explained?—Yes.

4325. And no further help has been given than that?—No.

4326. Do you agree with Captain Shaw's opinion, as expressed in Answers 1137 and 2705?—No, I do not.

4327. In what way do you disagree. At No. 1237 the question is: "Do you think that the Board could have done more, considering that they have been restricted by Act of Parliament to a halfpenny rate"?—With all respect, I really do not think I ought to be asked that question. I am only an official of the

the Board. Of course it would be obvious that if the money had been spent by me, I should have spent it in a different direction, but it is not for me to comment upon the proceedings of the Board at all; and Question 1705, which I will read together with that "an honourable Member wishes me to ask you for an explanation of Question 1237," the question already alluded to, "in reply to which you said that it would be obvious that if the money had been spent by you it would have been spent in a different direction;" have you any definite scheme by which you would have spent the money differently?—*A.* No; I only meant to convey that while my Board was looking at the leases, rents, and sites of buildings, I should have gone entirely into the *personnel* and *matériel* of the brigade, and should have developed it in that direction, leaving the other questions to remain over until such time as it would appear whether it would be economical or not to spend money in that way." I think you would like to make some remarks with regard to these two answers?—I should differ from Captain Shaw by stating that we have spent all our income, and that to have spent capital upon men and material would, in the first place, have been entirely illegal; we have no legal power to spend a shilling of capital upon current expenses; and, in the second place, it would have gone against Captain Shaw's own theory, and our opinion that it is most desirable to get the men under the roof where the engines are; if we had bought no land, and built no stations, we could by no possibility have had any of the men at the stations themselves; and, in the next place, if we had not built the stations we must have paid rent for all stables and all the men, and that would have been a considerable deduction from the income from the three sources, and we should have been largely crippled rather than have been able to make larger arrangements for the metropolis. Upon these three heads I differ from Captain Shaw.

4328. In fact, the question never arose, did it?—No; but we should have been compelled to give that advice to Captain Shaw if that had been mentioned.

4329. But you do not agree with Captain Shaw that 600 men left the service in consequence of overwork, and the absence of a retiring pension system?—I stated the other day that great numbers of men, I believe, would have gone away if the retiring pension had been in existence, and the work had been somewhat lighter, but in looking over our books I find that from the 600, 100 must be deducted as those who have positively died, or been dismissed for their own misconduct. For instance, about three weeks back we had to dismiss four men. We were rather anxious to save one man, but Captain Shaw told us that, if they were retained, the other men would not remain in the stations with them. No allowance has been made for them in the 600, and it would appear that if Captain Shaw's system had been carried out no single man would have been supposed to have left the brigade by death or in any way. Otherwise, certainly 600 men have not left the service for the causes which Captain Shaw has assigned, namely, the hard work and the want of a retiring pension, seeing that 100 men are clearly traceable to having been dismissed, or died.

4330. With regard to the four men, I believe you quite agreed with Captain Shaw that the men ought to have been dismissed?—Certainly; we did not hesitate, except that we felt a litfle compassion for one of them.

4331. In fact, their conduct had been most improper?—Yes; their conduct had been most improper.

4332. As I understand, although you do not agree that the brigade should be increased from 400 to 900, I believe you think that some increase ought to be made to the brigade?—Certainly. I think if this restriction upon the halfpenny were removed, we could, with the greatest possible benefit, add a man to each station, which would amount to about 50; and if we had the means we should like to place those escapes and those stations which have been upon our books for some length of time, and which we have been anxious to place; they amount to about 12 fire-escape stations, and 12 fire stations, and those with the central station would require 70 or 80 more men.

4333. Practically, it would altogether come to about 120 men?—One hundred and twenty or 130, and if Captain Shaw showed the Board that he really required 200 we should not hesitate when the restriction was taken off.

4334. You, as Chairman of the Fire Brigade Committee for two years, know

Mr. *R. Freeman.*

15 June 1876.

that the matter has been gone into very frequently, and that a list has been made of the stations which we should like to recommend the Board to take?—I have them in a list which we requested Captain Shaw two years since to report to us upon; that list has been before the Committee a long time (*producing a list*).

4335. You say that we have expended money almost exceeding our resources in putting down stations and fire escapes?—We have run into debt to do that in some cases, and very improperly.

4336. *Chairman.*] What do you mean by running into debt; do you mean upon the capital account or the income account?—Upon the income account; that accounts for the deficit.

4337. But the income account is not applied to the increase of stations, is it?—No; but wherever you put a station you want men, and that leads to an increase of current expenditure.

4338. Sir *James Hogg.*] Were you aware that the brigade was so short-handed as Captain Shaw has stated in the evidence which he has given?—I think I have already touched upon that matter this morning.

4339. Mr. *Hankey.*] You were a member of the Metropolitan Board of Works at the time the fire brigade was originally taken over?—I was.

4340. Can you state to the Committee what were the reasons which induced the Metropolitan Board of Works to accept the duty of providing a fire brigade, after the recommendation of the Committee of the House of Commons of 1862, that the fire brigade should be placed under the management of the police?—Exactly the same feeling as leads us to undertake any municipal duty which the Government of the day thinks fit to impose upon us.

4341. Then it was not a voluntary act upon the part of the Metropolitan Board of Works, but it was forced upon them by the Government of the day?—I do not think we took any active part, but it was not forced at all upon us; we were very willing to do anything which would be of service to the public.

4342. But that scheme or proposal, I suppose, emanated from the Government?—From the Home Office.

4343. It was not the suggestion of the Metropolitan Board of Works?—No.

4344. Was there any comparative estimate of expense made at the time, of placing the fire brigade under the Metropolitan Board of Works, as against placing it under the police?—I do not recollect that; I recollect the three estimates sent in by Captain Shaw, of which the Home Office accepted the lower one; Captain Shaw had to reduce his estimate to an expenditure of 50,000 *l.*, I think.

4345. And it was not upon any question connected with economy then that the arrangements were made through the Metropolitan Board of Works instead of through the police?—I do not recollect that, but I suppose one chief reason would be that as the people must be taxed, representation and taxation should go together.

4346. I think you stated, with regard to taxation, that your principal reason for not having incurred more expense for the fire brigade, was the unpopularity of imposing an additional tax upon the metropolis?—I do not think I said that was the principal reason; I said the necessity was not so urgent as to lead us to go to the Government to ask them to pass a Bill giving us increased taxing powers; we have been to the Government upon several occasions, and have not found them at all willing to promote Bills which would give us increased taxing powers.

4347. But those increased taxing powers would relate to other matters than the fire brigade, would they not?—We have been for loans; we have had very large alterations in our finances in the shape of borrowing, and spreading over a great number of years instead of over a few years, and in that way there has been considerable relief given to the metropolis; there has been a good deal of intercourse with the Government upon those heads from time to time.

4348. I think you used the expression that the taxation of the metropolis by the Metropolitan Board of Works was unpopular?—I think it is unpopular by every Board; I have the misfortune to belong to another Board, namely, the School Board, and it is very unpopular as regards that Board.

4349. Did

4349. Did you apply that word "unpopularity" with any reference particularly to the fire brigade?—Certainly not.

4350. The words, I think, that you used at Question 3930 were that it was "an exceedingly difficult thing to get an increase of taxing power; it is very unpopular, and unless the case is very urgent we are not anxious to go and trouble the departments"?—Yes, it is difficult to get the Government to do it.

4351. But there was never any objection as far as you are aware, I believe, raised to the taxation on the part of the public with regard to the fire brigade?—No.

4352. Are you aware of the evidence given by Mr. Easton before the Committee of 1862, with regard to hydrants?—No, I am not.

4353. I see that Mr. Easton says in answer to the question, "Would there be a hydrant there? (*A.*) There would be hydrants along the course of the large buildings; I would put hydrants or posts where I could screw on four hoses to each, and those I have calculated, one in 30 yards by the warehouses and large buildings." Then the next question is, "Is not the system of hydrants more simple than the ordinary turncock system of the water companies?" and the answer is, "It is more simple a great deal. (*Q.*) Is it not a thing that any ordinary man can turn on; it requires no knowledge, except turning the cock? (*A.*) Quite so, any man can do it;" does that opinion of Mr. Easton, with regard to the expediency of using hydrants in preference to the present system, which I believe is continued very much now as it was then, agree with your opinion upon that subject?—It all depends whether there is a sufficient quantity of water, and whether there is sufficient pressure; I cannot think that the hydrants would be of very much service if the pipe is not large enough to give the quantity, and if the pressure is not sufficient to carry the water to a given height.

4354. Then you do not think a hydrant is of any particular use unless the supply of water is made adequate for the purpose?—I think it is of some use, but not of such use as to warrant a public board in spending a million of money to supply London with them.

4355. If the water supply were sufficient, you admit that a hydrant is a better mode of getting at the water than a plug, do you not?—Yes, I do.

4356. I thought you expressed a different opinion?—No, that is my opinion.

4357. Now, going back for a moment to the question about putting the fire brigade under the Metropolitan Board of Works, are you aware that Sir Richard Maine, then Chief Commissioner of Police, was ready to undertake the charge of the fire brigade in connection with the police?—I have not any real knowledge upon that point.

4358. I think you stated that the insurance offices were voluntary parties, assenting to the charge placed upon them; are you not aware that, before the Committee of 1862, Mr. Newmarch, on behalf of the insurance companies, stated that the fire insurance companies had quite determined to give up the maintaining of the fire brigade, and that they considered it was no part of their duty to pay for the protection of life and property against injury by fire, and that he, Mr. Newmarch, considered such a duty especially one for the municipality to undertake?—I should agree that it is the duty of the municipality, but it must be an enormous benefit to the insurance offices. I have no doubt that they would have been glad to have contributed nothing, and yet in the end they would have been willing to have such an efficient brigade as to protect their property, for it is to protect their property.

4359. As you state unhesitatingly that you consider it of great importance to the fire insurance offices, will you explain what interest in the world the insurance offices have in this question?—To prevent their property being burnt down.

4360. Are not the premiums that are paid relative to the risk run; if there was more risk would not the premium be higher, and if there were less risk would not the premiums be lower?—I judge from their own conduct in having for so many years, at their own cost and charge, maintained a fire brigade to extinguish fires.

4361. But you do not answer my question at all?—But the facts speak louder than words.

Mr. *R. Freeman.*

15 June 1876.

4362. I do not say for what reason the fire insurance companies choose to undertake this duty previously, but I ask you, as your opinion has been given decidedly that the insurance companies have a great interest in the maintaining of this body, if you can explain to the Committee what interest the insurance offices have in maintaining a fire brigade at all?—I think it is very obvious that the lower they can make the premiums which the public has to pay the more the public will insure; and if they are called upon, out of their funds, to pay two or three times as much per annum, of course they must ask very much higher premiums for the risk which is run, and then the public would cease to insure, and their business would be largely curtailed, and their profits also.

4363. You think that the profits of insurance offices do not depend upon the premiums that they charge, but upon the amount of risk that they run, and that their premiums are not based upon the supposition of a certain amount of risk; is that your opinion?—Of course the premiums are based upon the supposition of a certain amount of risk; but if the risk is very great and the premiums very high, the business they will dowill be very small, and from a small business the offices cannot have the same amount of profit as they would from a larger one.

4364. Then I understand you do consider it a part of the duty of fire insurance offices generally throughout this country to bear the expense of putting out fires?—It is not for me to lay down the duty of anybody, but I think the fire insurance offices are very wise in contributing to maintain such a brigade.

4365. Mr. *Hayter.*] Are the wishes of the London vestries respecting new stations communicated to the Fire Committee of the Metropolitan Board of Works, and considered by them?—We have representatives from every vestry, and the representatives of the vestry of the district would take part and advise and co-operate either for or against a station which was proposed to be placed in his district.

4366. But if he is not a member of the committee of the Fire Brigade?—Everything is brought from the committee to the Board, and has to be considered by the Board after it has passed the committee. And in addition to that, if we were about to consider the placing of a new station in Chelsea, the Member for Chelsea would be invited to attend the Fire Brigade Committee to state his views and co-operate with them, and for all purposes he would be one of the committee.

4367. You are of opinion that if you have several new stations some additional men are desirable?—Yes.

4368. Have you estimated what increase of income would be necessary to meet the expenditure that would entail?—I have not gone into that in detail, but my impression is that we should require a rate of about three farthings instead of a halfpenny.

4369. Not so much as double the halfpenny rate?—I do not think so, but I should not like to limit myself. If it could be shown that it was absolutely necessary, I am prepared to do whatever is necessary for the protection of the metropolis.

4370. Is Captain Shaw practically uncontrolled in matters relating to the duties and discipline of the men?—He is entirely uncontrolled.

4371. Will the Fire Brigade Committee of the Metropolitan Board of Works take notice of the alarm-men sleeping fully accoutred in their stations; will it be anybody's business to inquire into that matter?—We really very seldom interfere with Captain Shaw in any way; he is an absolute minded man, and he does not like any interference of that sort. I do not want to say anything upon that head, but we leave Captain Shaw to discipline his own army, and to control and manage it.

4372. With regard to what you consider the unnecessary cleaning of engines, would anybody take notice of that?—We may mention it to him, but we should certainly not think of saying you shall not have it done; the responsibility rests with him to have everything in order and readiness, and we should not think of interfering with him; we might of course mention it to him, and ask his opinion upon the matter, but we should let him entirely take his own course.

4373. Is the statement correct that when the men live in the stations they are able to turn out at any time within $3\frac{1}{2}$ minutes, but that when they live out

out 10 minutes has to be expended in collecting them?—I should think it would take three or four minutes to call the men when they live out of the station.

4374. You are of opinion that it is highly desirable to house all the men within the station?—I should like to have every man under the roof of the station.

4375. Is a drill-ground absolutely required for a central station?—I think it will be a great benefit to the central station, and I am now negociating for a plot. We should then have every man upon it, and workshops upon it.

4376. You consider it highly desirable to have a drill-ground at the central station?—We have had a very convenient place for it, namely, a wharf near to Watling-street, but that wharf is now gone, and there is no place near, so that it becomes a necessity now to bring them all into a focus.

4377. Mr. *John Hardy.*] I only wish to make one small point clear with regard to hydrants. You stated two or three times that you did not think hydrants are worth putting down without a sufficient pressure. No doubt you well know that water companies are bound to deliver in their districts under Act of Parliament at a certain pressure. Do you mean that you are not content with that pressure, or that they do not deliver at the requisite pressure?—I do not think the pressure at which they are bound by Act of Parliament to deliver water would be sufficient to enable us to use the hose and the hydrant without the engine, and in addition to that there is the varying of the pressure and the smallness of the pipe in some places. Mr. Ritchie asked Mr. De la Hooke whether it would not be sound policy to put down hydrants from time to time upon the pipes. I venture to think it would not be sound policy. When the whole water system is to be arranged under one great engineering head a large number of these pipes will probably have to be taken up and larger ones put down; they are too small. In a great number of places where they have the hydrants put in, those places would be simply wasted.

4378. Mr. *Ritchie.*] Why wasted?—Because you would take up the pipes with the hydrants upon them, and have to put down new pipes with hydrants.

4379. Mr. *John Hardy.*] But it would not be the whole pipe that was taken up?—No, the saddle pieces.

4380. You do not consider that, under the Parliamentary pressure, as provided, hydrants are worth putting up at the expense they would cost at present?—That is as we have been advised.

4381. That is your opinion?—That is my opinion as advised by engineers; by our engineer and others. Scientific people will come here to give the why and wherefore scientifically.

4382. But you yourself do not complain that companies do not deliver at the pressure they are bound to by Act of Parliament?—Not the least. I have not anything to say against the water companies; I think they are doing, as commercial companies, all that you could expect from them.

4383. Sir *Andrew Lusk.*] I wish to ask you one or two simple questions. About how many men have you altogether?—About 395.

4384. And how many stations?—Forty-eight; 52 with the four on the river.

4385. I wish to ask you, as a practical man, because it is one of the questions that the public ask, do you think, as a practical man, and a man whose opinion men have respect for, that that is a sufficient number of men and material for the wants of this great town?—I have already said that if this Committee should recommend the removal of the limits upon the halfpenny, we have a list of stations for escapes, and a list of fire stations, that we should be glad to add.

4386. Do you think that it is necessary to have more?—Yes, to a certain extent it is.

4387. What I mean is this: An insurance company has a capital, say, of 500,000 *l.*, and it may insure a couple of millions, but it may not want any more capital, though it may insure 5,000,000 *l.*, because its risks are scattered all about; and I would ask you whether your present staff is something like what the requirements of this great town demand?—My opinion is this, that we have done up to the very hilt of the powers given us, and I consider it a very fair, and efficient, and good brigade; but if the limit is removed we consider

Mr. *R. Freeman.* 15 June 1876.

it advisable and desirable that the protecting means for this metropolis should be increased.

4388. But I am one of the ratepayers, and I ask you do you consider that the ratepayers have a fair average amount of protection at present?—I thought I had answered that question by saying that I should supplement what exists by a certain number of brigade stations, and a certain number of engine stations, and I should like to put another man at each station, because I do not want the men to have a more tiresome and monotonous life than is necessary.

4389. Substantially, you think that there should be some increase made?—Yes; but I do not wish it to be understood that I would go up to Captain Shaw's estimate.

4390. Mr. *Ritchie.*] When you refer to what Captain Shaw required, you refer to the estimate of 900 men?—Yes.

4391. Sir *Andrew Lusk.*] Will you refer to Question 1003; Captain Shaw was asked: "With your present number of stations and engines, what increase of men do you consider necessary to work them properly," to which he replied; "I think without increasing any of our duties at present, either our fixed watches or our duties at fires, that by adding 50 per cent. to the existing force we should be in a perfectly satisfactory condition"; what do you think of that?—I have already said that with my present views and notions I think that is a somewhat extravagant estimate, but at the same time I assure you that I, and I believe the majority of the Board, are most anxious to do whatever Captain Shaw and other advisers may show us to be necessary for protecting the metropolis. I quite see myself that 100 men must be added. If we get this new central station, if we add a man to each of the other stations and add thus other new positions, we shall require from 100 to 120 men to be added at once.

4392. You think the number mentioned there a little outside of what might be done with?—Yes, that is my opinion.

4393. It is your opinion that I want; we have had a good deal of evidence from experts, and I would like to have your opinion, because you have practical knowledge?—That is my opinion.

4394. You mentioned that Captain Shaw is uncontrolled by the Board entirely?—Yes, with reference to the discipline of his men and the arrangement of his brigade, but not as to the expenditure for anything; everything in reference to expenditure comes before the committee.

4395. Who is he under in case of any difference of opinion, say with regard to the discipline of his men?—He is absolute, except that if men have to be dismissed we hire them, and it is for us to dismiss them; to do the final act, but we invariably act upon Captain Shaw's advice if possible. Of course if there was anything very outrageous, and quite contrary to what we believed to be conscientiously right, we should act upon our own responsibility, but we are anxious to leave everything to the responsibility of Captain Shaw.

4396. But that is rather contrary to the doctrine of the army; you can appeal to the Duke of Cambridge at last if there is an act of tyranny; under Captain Shaw what is to be done?—They can appeal to us; if Captain Shaw did something to the men which the men rebelled against, the men could apply to the Board.

4397. But you said that Captain Shaw was uncontrolled; I put this question to you because I represent a constituency who pay rates, and we wish to know how you are expending our money?—I am afraid we have been rather too careful about expending it according to the opinion of this Committee.

4398. But you say that Captain Shaw is uncontrolled?—Yes, with regard to the discipline and the working of the men, but not as to the expenditure, or anything of that sort.

4399. But as a gentleman who knows a good deal about London, do you think this fire brigade is under the proper authority now, or that it would be better under the police?—I am afraid that you would not take my humble judgment if I were to give it. I believe the brigade is very well managed, and very efficient, and that if you had not restricted us so much as you have we should have made the brigade still more efficient.

4400. But I think you are a very good authority to ask about this matter, and I should like to have your opinion?—Then I think you had better leave things

things as they are. I think if the brigade were placed under the police, where there would be no representation, but where there would be taxation, the population of London would not be so well pleased as they are at present I think that taxation and representation ought to go together.

4401. You were rather astonished at the answer given by Captain Shaw, that so many of the men left because the work was so hard. But you have modified the answers that I have heard given very much. You do not think the work is so irksome and hard that men will not stop with you?—It is irksome and monotonous toil; but it is not hard and exhaustive to the extent of breaking down constitutions to the extent that has been stated.

4402. I look at the returns, and I find that there is an average of four fires a day in London. I thought those men could not be so harassed by four fires a day?—I think that they are rather harassed from the fact of there being so few fires. One of the men told the Committee that the men liked a few fires, and that they liked the cleaning work. I am afraid it is the length of time that they have nothing to do which renders the work most tedious to them.

4403. There are four fires a day for 12 months, and some of them would not be large fires?—You must bear this in mind, that all the engines in the same district are summoned to the same fire, because the telegraph message goes all round, and therefore to that one fire the whole of the engines of the district may have gone.

4404. Mr. *Ritchie.*] Referring to Captain Shaw's report for 1875, on page 4, he says the number of calls for chimney fires have been 4,050?—Yes.

4405. Mr. *Hardcastle.*] I understood you to say that you thought a considerable extension of fire-escape stations was necessary?—We have about 12 stations down, to place as soon as we can.

4406. Have you given much attention to the amount of life saved by these fire-escapes since they have been under the control of the Board?—I cannot say that I have particularly attended to it.

4407. I was surprised to find, from Captain Shaw's statement, how very few lives are lost in the metropolis; they only amount to 30 a year, and that includes, according to Captain Shaw's statement, cases of children burnt in rooms where they have been left by their mothers, and also cases which he hears of casually through the newspapers; it was in consequence of that that I asked several of the men who were witnesses whether they had had any experience of saving life, and none of those that I asked had had any experience of a life being saved by the fire escapes; they all said that somebody else had given the information. I wished to know whether your attention had been drawn to that subject, and whether there was much real necessity for the retention of those escapes?—I should say I have known some cases in which the escape has been of use and saved lives. I have known it in my own neighbourhood, and I think it gives great confidence to the public to know that the means of escape are within reach. Then, with regard to the fair and equal distribution of those stations, we derive an income from the whole of London, and if the whole of the metropolis is taxed they have a right to share in the protection fairly and legitimately.

4408. Have you any idea of what the expense of an escape station purely is?—Escape stations are generally attached to the stations of fire engines. Two men run the escape out, and one remains all night with it. We have not a separate station in order that the escape may stand in it. Many of the standing places are gratuitous; in other cases we pay 5 *l.* or 10 *l.* in order that they may stand in a passage or corner.

4409. But the man sleeps in the box on duty?—Yes.

4410. What do you consider the expense of each of those escapes, as compared with the cost of a fire station?—There is the cost of the escape, and we should reckon three men to two escapes. Of course there is the wage of the men, and the capital and interest upon the capital of the escape. An escape costs about 60 *l.*, I think.

4411. The interest upon that would be very trifling; therefore, practically, the expense is the pay of three men to two escapes?—Yes.

4412. That would represent, perhaps, something like 150 *l.* a year?—Yes, something of that sort.

4413. There was one other point I wish to ask you about; it was stated that Captain Shaw proposed to increase the brigade by 500 men; from 400 to 900;

Mr. *R. Freeman.*

15 June 1876.

but I find from the question that has been referred to by the honourable Member for Finsbury, that he stated that 50 per cent. would be sufficient?—I think it was put in this way, that supposing the number either of fire-escape or brigade stations were not increased, he would be able, with the addition of 50 per cent., that is, of 200 men, to work the brigade according to his own views, and to his own satisfaction: but that if he were to arrange a complete system for the protection of life and property in London he would require to have a considerable number more stations, and the brigade would have to be increased to 900 men.

4414. Then I understand you to say that to work the existing stations 50 additional men would be sufficient, and that to work a larger number of stations, such as you would think necessary, would involve an increase of from 100 to 120 men?—I think I said 50 additional with the present stations, and about 120 altogether, including the stations that we have upon our list for escapes and fire-stations, which amount to about 12 of each.

4415. That is all that you think at present necessary?—Yes, that is all that we think at present necessary.

4416. Then the difference between you and Captain Shaw is this: Captain Shaw thinks an addition of 200 men necessary to work the present stations, and you think 50 necessary; Captain Shaw thinks 500 men additional necessary to work the whole of the metropolis efficiently, and you think from 100 to 120 additional would be necessary?—But I might just say that the suburbs are springing up so fast, new neighbourhoods are rising, bare ground is being covered, and applications for stations in those neighbourhoods are made to us; that we have from year to year to meet the increase of the metropolis. Therefore I should never draw a hard-and-fast line and say we have now arrived at the ultimatum. I should adapt the supply to the demand.

4417. I did not refer to the prospective increase, but, comparing your view with Captain Shaw's, that was a fair statement of your view, was it not?—It was.

4418. Sir *Henry Peek.*] The fire-escapes are partly used to drag the hose up to the tops of buildings, are they not?—Yes, sometimes; they are very useful for purposes besides that of saving life.

4419. *Chairman.*] I have two or three questions to ask you upon the answers you have given now, and I would ask you this on the answer you have just given to Mr. Hardcastle. Captain Shaw when he estimated an increase of 193 men, I think, contemplated dividing the present area into five instead of four districts, and stated that the number he mentioned, namely, 193, would be required for placing two additional men at each station in the head districts for the relief of over work, and the rest to be made up of the additional men required as superintendents and head men?—I should have supposed that an additional man at each station would have given the relief required. It would have enabled the officers in command to give a great deal more leave, and that is one of the chief things required, in order that they may not be so dissatisfied as they are at present.

4420. With regard to the answer you gave with reference to the contributions made by the fire insurance companies, are you aware whether the fire insurance companies in any other place than the metropolis contribute to the maintenance of the fire brigades of those municipalities?—I do not happen to be aware of that.

4421. The matter has never been brought to your notice that the question of the contributions by the fire insurance companies has been subject to the decision of a court of law, and that a court of law has decided that they were relieved from any necessity to contribute?—No, I confess I did not know that.

4422. It was the case of the Drighlington Local Board, which was decided by the Chief Baron?—That was without an Act of Parliament.

4423. I asked you whether you were aware of that it is only on account of the Fire Brigade Act in the metropolis, and the terms contained in that Act, that there is a necessity of contribution from the insurance companies?—I quite understand that.

4424. And therefore I gather that what you consider to be the fair and proper thing is not considered to be the fair and proper thing in any other part of the country, except where this Act has provided for it?—I would suggest whether that might not arise from a very large portion of the property of almost every town being insured in London.

4425. Might it not arise rather from the fact that at the time the Fire Brigade Act was brought in the insurance companies had an existing fire brigade, and that advantage was taken of that to get them to contribute to the general fund?—I always thought that they preferred contributing to the general fund to continuing to maintain their establishment, or to its disappearing altogether.

4426. But at the same time a similar duty would lie upon the local authorities in the metropolis which does lie upon all local authorities, to provide protection against fire for the inhabitants, would it not?—I am not supposing that in common law you could call upon the insurance offices to contribute, but it was a just and equitable arrangement made legal by Act of Parliament.

4427. It was an arrangement into which it has not been thought necessary to force the insurance companies in any other part of the country?—The metropolis is very exceptional in a great many respects.

4428. I understood you to state that, supposing the restriction were taken off the halfpenny rate, the Metropolitan Board of Works would at once proceed to deal with an increase of the brigade?—I think so.

4429. Might I ask why, feeling that, and having these recommendations before them, and being prepared, if they get the rate unrestricted, to provide additional security, they have never asked for additional powers?—Because we have always found a great deal of unwillingness on the part of the Government to assist in helping us to increase the taxation.

4430. You have stated that you never applied?—May I put our present position before you. We are most anxious to purchase an acre and three quarters of ground at a cost of 35,000 *l.*, and an expenditure of 18,000 *l.* or 20,000 *l.* upon it, whereas we have not a single penny with which to purchase and pay for it; if the Treasury will not assist us in getting a Supplemental Vote this year, it must pass away and we cannot purchase it; the Treasury has been more stringent and strict with us this year than ever; each year we have to get each sum voted upon a Loans Bill, and, therefore, we have nothing in hand for an emergency of this kind.

4431. I quite understand, but that all relates to a question of capital account. What I wish to ask you is, the reason why the Metropolitan Board of Works, when they have had placed before them evidence which they admit is sufficient to make them say, through your mouth, that they would wish the limit with reference to the halfpenny rate removed, and having facts before them with reference to their income being deficient, have not placed those facts before the Government, and asked them to increase their powers, not of raising the capital account, but of expending a larger sum of money out of the rates for the maintenance of this brigade?—We have not hitherto been anything like as hopeful of getting assistance from the Government as we have been lately; seeing the spirit and tone of this Committee, we feel that this Committee is anxious that we should spend more money in making the brigade efficient; that will have an influence upon the Government we hope, and that we shall get the restriction removed; but I confess that we had not much hope if we had gone to the Government and asked them to bring in a Bill to increase the taxation, or remove the limit, that we should have been successful in that application.

4432. I understand, then, that you yourself and your committee, are anxious that an increased rating power should be granted, but that you have been deterred, because whenever an application has been made to the Government for an increased power of raising capital you have found difficulties thrown in your way?—There have been difficulties.

4433. And therefore you have hesitated to apply to the Government, pointing out to them that the working of the brigade was practically rendered less efficient than it ought to be, for increased power really to make it efficient?—It has never been sufficiently urgent to lead us to grapple with the difficulty.

4434. You had hoped, in fact, to tide the difficulty over?—We had hoped that the increase upon the rating would have increased our funds more than it has.

4435. Mr. *Ritchie.*] Is it not the fact that you, as chairman of the committee, made a report to the Board, recommending that further rating powers

Mr. *R. Freeman.*

15 June 1876.

should be applied for, and that that report was rejected by the Board; you read that report at the last meeting of the committee?—Certainly, that was at the moment that we took over the fire-escapes.

4436. *Chairman.*] You answered, just now, very naturally, that you thought the Metropolitan Board of Works was by far the best authority for controlling and regulating this brigade, and that you did not think it would be acceptable to the ratepayers of London if it were placed under the police; you are aware that the police are paid for by a rate levied upon the taxpayers of London, and that the police are placed under the central authority, not under the Metropolitan Board of Works?—Yes, that is so.

4437. Is there anything to lead you to think that there is any difference in the raising of this particular halfpenny or penny, as compared with the 8 *d.* or 9 *d.* which may be required for the metropolitan police?—I do not think that the centralising process is a popular one, or that any step which leads to the doing away of representation wherever there is taxation is popular; on the contrary, I am inclined to think that the more you centralise and do away with municipal institutions, the less it will become acceptable to the people.

4338. But you think that *quâ* the police, the taxpayer is prepared to be taxed, and for the purpose of efficiency to allow the central authority to regulate it?—I recollect the time when the Police Act was introduced, and the frightful unpopularity of the thing at that time. The public has considered the subject, and it has become popular and acceptable.

4439. Do not you think, if it could be shown (I am not implying that it could at all) that greater efficiency, and consequently greater protection to property in town, would be arrived at by making the brigade a separate detachment of the police force, that then the inhabitants and taxpayers of the metropolis might not be quite so opposed to it as you now fancy?—If a very clear and strong case was made out, I should not persist in saying that they would not accept it willingly.

4440. It is a thing which must rest entirely upon greater efficient establishment, as likely to be produced either by one or the other?—To a certain extent, but at the same time municipal institutions are looked upon as having been the educators of the citizens, and therefore it is not merely a question of money.

4441. I wish only to show, with regard to the police, that the metropolitan taxpayer has been for a great many years accustomed to trust the administration with the disbursement of a large amount of money?—Yes.

4442. And the imperial taxpayer allows a central authority to deal with the army?—Yes, the army could not be very well managed by a municipality.

4443. Have the Metropolitan Board of Works the administration of any other executive body except the fire brigade; that is, is there anything analogous to the fire brigade and its establishment under the control of the Metropolitan Board of Works?—No, I do not recollect anything of the kind.

4444. With regard to an answer which you made to an honourable Member, in which you referred to Mr. Easton and his evidence given before the Committee of 1862, is that the same Mr. Easton whom you referred to in answer to Question 3964, when you joined him with Sir Joseph Bazalgette and his report, as justifying the Board in refusing to place hydrants upon the mains, unless constant pressure existed of a certain kind?—I believe it is, but I am not sure.

4445. Mr. Easton's opinion must have changed then since he gave that evidence in 1862?—No, I do not see that; he gave his opinion in favour of hydrants under certain circumstances; those circumstances have not come to pass; a state of things does not exist upon which he would give the advice to place hydrants; he says the state of things is not such as to warrant and justify the Board in now placing them.

4446. But in Mr. Easton's evidence, when he was being examined on the existing state of the water supply of London, and the way in which it could be utilised for the purpose of extinguishing fires, he gave it as his opinion, as the honourable Member read, that there would be great advantage in placing hydrants upon mains fully charged?—But we had had only one or two answers; we did not know anything about the antecedents; he might have given those answers upon the supposition that we were to have a real *bonâ fide* high pressure.

Mr. *R. Freeman.*
15 June 1876.

4447. What I wish to know is whether it was the same Mr. Easton who gave that evidence as the Mr. Easton upon whom the Metropolitan Board of Works relied when they referred to him the question regarding the placing of hydrants into mains?—I believe it is.

4448. Now, with regard to the question of discipline, you stated that it rested entirely with Captain Shaw with reference to work, and everything of that sort?—Yes.

4449. I suppose what you meant was that the Board considered that Captain Shaw was the best person to decide in what his brigade ought to be administered for the purpose of producing the greatest efficiency?—Just so.

4450. Then, when Captain Shaw states that he is short-handed, and that more men are required, as he has stated, to make his force efficient, are you not prepared to accept that upon his responsibility?—And we have done so. In 1868, Captain Shaw made a report that, with the addition of 38 men, I think it was, he would be able to work the stations properly and comfortably; we granted that. All the additional stations have been supplied with men according as the stations in their proportion required, and I confess that I never heard of any application for 200 men, or any definite complaint as brought forth and stated here by Captain Shaw. As I have stated here, Captain Shaw had undertaken to send 100 men and engines to Paris, and I had no idea that he would be able here to give the harrowing evidence that he has given.

4451. And you would say, notwithstanding that you admit that the Board are not in a position really to interfere with Captain Shaw's responsibility in the management of his men, that you do think that they might reject the statement he makes, that the efficiency of his brigade cannot be maintained unless it is increased by the addition of those 190 odd men he suggests?—We always give most serious consideration to any suggestion he makes, but might I not put it that if that kind of opinion, which you have just expressed, were to be followed explicitly, we might as readily, and as unhesitatingly, give him the 900 men, because that is what he says is necessary, in his judgment, to enable him fully to protect the metropolis. Now we, as representatives of the metropolis, whose money we collect, and whose money we administer, have arrived at the conclusion that that is a most extravagant assumption.

4452. Captain Shaw rather arrived at the 200 men upon the idea that the police were to assist him by their stand-points, so as to do away with the necessity of increasing his stations, as would be necessary under his larger scheme?—I have not so understood his evidence. I have never seen any evidence in which he gave up his ultimate project.

4453. Mr. *Ritchie.*] Yes, he said he would prefer the other scheme?—Then I have not fully apprehended the effect of his evidence.

Mr. *Guildford Barker Richardson*, called in; and Examined.

Mr.
G. B. Richardson.

4454. *Chairman.*] You are the Vice Chairman of the Works and General Purposes Committee of the Metropolitan Board of Works, I understand?—Strictly speaking, I may say I was so up to Tuesday evening, when I ceased to be a member of the Board by effluxion of time, and I had the honour of being elected again yesterday evening for another three years.

4455. Probably I think we may infer that you will fill the position of vice chairman during that additional period?—No, by a bye-law of the Board no man can serve more than two years, and I have already served that period.

4456. But you are prepared to speak with reference to the action of the Board upon this question of superannuation?—A memorial from the officers and men of the brigade was presented to the Board on the 6th of March 1874, and it was referred to the Works and General Purposes Committee for consideration and report, and it has been therefore part of my duty to attend to the matter all the way through.

4457. Was there any action taken upon that memorial?—The matter was considered by the Works and General Purposes Committee purely as an abstract question whether or not it was desirable that there should or should not be a

Mr. *G. B. Richardson.* 15 June 1876.

superannuation fund, and upon the 31st of July 1874, the Board considered the report of that committee, and the Board resolved upon a motion which I made in bringing up that report, that in the opinion of the Board a superannuation fund based upon contributions from the men should be established for the fire brigade, and that the matter be referred back to the Works and General Purposes Committee, with instructions to prepare and submit to the Board a scheme for the purpose.

4458. What action was taken by the Works and General Purposes Committee?—The next step to that was upon the 5th of October 1874. The Works and General Purposes Committee acted under that reference by referring it to a sub-committee of the Works Committee.

4459. There was nothing done between July and October?—No; that was the period of the recess of the Board. Immediately after the 31st of July the Board retired for their recess, and took the matter into consideration shortly after the return of the Board.

4460. Was not there a scheme prepared by Mr. Thompson at that time?—There was a little interval of time which elapsed between the time of the committee and the sub-committee meeting. The sub-committee met upon the 27th of January 1875 to consider the scheme which was proposed by Mr. Thompson, who was chairman of the Fire Brigade Committee. I think that that interval of time was more, perhaps, occupied in waiting while Mr. Thompson was completing the proposed scheme which he was anxious to place before the committee.

4461. What action was taken upon Mr. Thompson's scheme?—A resolution was arrived at by the committee that the proposed scheme be circulated amongst the members of the committee, and that Captain Shaw and the accountant do report on the same, and bring up any suggestions they may think desirable after due inquiry.

4462. Did they do so?—They did so; and upon the 2nd of March 1875 the sub-committee met again, and Captain Shaw's report was then read, stating that he had conferred with the men, and that they did not approve of the terms of the proposed scheme, and a report was also received from the accountant of the Board, which was ordered to be printed and circulated. I have with me, if the Committee would require it, both the original scheme proposed by Mr. Thompson, the report of Captain Shaw, and the report of the accountant.

4463. Will you inform the Committee what was the outline of the original scheme?—The outline of the original scheme by Mr. Thompson was that the men should contribute $2\frac{1}{2}$ per cent. of their pay; that no member of the brigade should be entitled to any benefits except on being permanently disabled, or having a medical certificate; that after 10 years' service a member becoming unfit for duty through permanent ill-health should receive a pension equal to 10-40ths of his pay, and that after 30 years' service he should retire with a pension equal to 20-40ths of his pay. The next point was that the men should transfer to the superannuation fund the whole of the amount standing to their credit in the firemen's saving fund, and that the payments of the men should be for a fourth-class firemen, 8 *d.* a week; the third, 10 *d.*, and the second 1 *s.*; the first-class firemen, 1 *s.* 2 *d.*; second-class engineers, 1 *s.* 4 *d.*; first-class engineers, 1 *s.* 6 *d.*; superintendents, $2\frac{1}{2}$ per cent., and that the subscriptions to the firemen's saving fund should cease at the time the scheme came into operation, but that any member of the brigade who had subscribed to the firemen's saving fund, and leaving the service without having attained a pension, should receive the amount which he had subscribed to the fund, and that every pension should be given by the Board upon a report from the Fire Brigade Committee, and be subject to be withdrawn for a time, or entirely at the discretion of the Board, and that pensons should not commence until five years after the commencement of the fund. That was proposed in order to allow the fund to accumulate, and to get some sort of consistency in its establishment, but that the above rules should not apply to the case of any member of the brigade killed in the execution of his duty, in which event his widow and children should receive such pension from the general fund of the fire brigade as the Board might determine. That generally was the principle of the fund, and then there was an estimate which Mr. Thompson made at the time of the proposed outlay and receipts of the superannuation fund under his scheme, and it was estimated that there would be about one-

tenth

tenth in process of time of the fire brigade upon the superannuation scheme at a cost, as he estimated, of 1,247 *l.* a year, and that the income of the fund would be about 1,329 *l.* a year.

4464. Does the scheme give the time at which the one-tenth would come upon the fund?—No, he does not mention the time, but it was supposed that in the course of about 14 or 15 or 16 years, probably, that tenth would come upon the fund, taking into consideration the ages of the men and their service in the brigade.

4465. Upon that scheme Captain Shaw reported, after referring it to the men, did he not?—Upon that scheme Captain Shaw reported, stating the views of the men.

4466. What were the general terms of that Report?—Captain Shaw was asked to offer suggestions, but he does not offer any suggestions; all the remarks which are made by him are merely objections to the scheme rather than suggestions with reference to any other scheme which should be made. He said that he had conferred with the officers and men of the brigade, both by writing and by word of mouth, and that he found so much difficulty in gaining their views that he had requested them to reduce them to writing; that there were three points upon which he found the men were very strong; one was that the Board, in accepting their services, acknowledged, under the 8th section of the Fire Brigade Act, a responsibility to provide for them and their families under certain circumstances, but that after a lapse of nine years they are still left in a state of complete uncertainty with reference to the nature, extent, and conditions of those provisions. Another was, that the scheme was considered by them as, in fact, the foundation of a system of superannuation for a future generation of firemen entirely at the expense of the men now serving. But I may remark upon that, that it was entirely misunderstood; there was not the slightest authority for such a remark to be made; it could be easily shown to be directly contrary to that. Another point he dealt with was this: "A third point, and one which alone would prevent their acceptance of the scheme, is that they cannot be made to see in it any advantage beyond what they could themselves obtain by the establishment of a club which would be entirely under their own control, and that, as they cannot afford to establish such a club for their own benefit, they could still less support a scheme for the benefit of their successors in the brigade, and they do not think they ought to be called upon to do so." Then Captain Shaw says that he deeply regrets the result. He contrasts the brigade with the police, and thinks that the firemen are subject to many more casualties than the police of the metropolis, and that, therefore, their case should be specially considered; and he concludes his report by expressing a fear that if something is not done the men will be dissatisfied, and that there will be a danger of the discipline of the brigade being more or less affected.

4467. At the same time your accountant reported likewise, did he not?—Our accountant reported, and that report is in print.

4468. Did he report in favour of Mr. Thompson's scheme generally?—He did not.

4469. After these reports were received, what was the next action taken by the Board?—The next proceeding was upon the 23rd of March, when the sub-committee resolved on certain main conditions, which in their judgment ought to be, and form the basis of a superannuation scheme, and they instructed the accountant to prepare a scheme based upon those conditions. I will read those conditions: "The following conditions to be observed by the accountant in preparing a draft scheme of superannuation for the fire brigade. That no man shall be entitled to a pension or gratuity on retirement unless it be certified by the chief officer and one of the medical officers of the fire brigade that he has become incapacitated by age or infirmity for the proper discharge of his duties. That no man so incapacitated shall be entitled to a pension unless he shall have completed 15 years' service in the brigade. That any man so certified to be so incapacitated who shall have completed 15 years' service shall be entitled to a pension equivalent to fifteen-fortieths of the pay he may be receiving at the time of his retirement. That for a service of more than 15 and not exceeding 25 years the pension shall be at the rate of one-fortieth of his pay for each completed year of service. That the maximum rate of pension shall be twenty-five-fortieths of the man's pay at the time of his retirement. That

Mr. *G. B. Richardson.*

15 June 1876.

in calculating the amount of pension the actual pay of the rank to which the man belongs be alone taken into consideration to the exclusion of all special pay and all allowances of whatever kind. That a man who becomes incapacitated after a service of less than 15 years shall, if he have served not less than seven years, receive, on retirement, a gratuity to the amount of one month's pay for each year's service. That the foregoing conditions shall not apply to men permanently disabled by injuries received in the discharge of their duties, but that every such case shall be specially considered on its merits. That the Board having already provided, by a general order made on the 24th of November 1865, that in the event of a man being killed in the discharge of his duty, his widow shall be provided for by an annuity to continue during the pleasure of the Board, any such case shall be considered on its merits. That the contribution by the men towards the superannuation fund shall be, as nearly as possible, 2½ per cent. of their regular pay, exclusive of special pay and allowances of every kind. That no man dismissed from the force, on leaving it without being entitled to a pension or gratuity, shall receive back any part of what he has paid, or of what has been deducted from his pay in respect of the superannuation fund. That the question of the course to be taken with respect to the existing Firemen's Savings Fund be considered by the accountant." Acting upon those instructions, the accountant presented to the same committee, upon the 22nd of June 1875 following, a draft scheme, which I believe is put in; it was ordered to be printed and circulated amongst the members for their consideration.

4470. Founded upon the terms which you have read?—Founded upon the terms of these understandings which I have read. It virtually carries out what I have read.

4471. That was submitted to the sub-committee, was it not? — That was taken into consideration by the sub-committee upon the 3rd of August following, and it was then considered, and there were several additions and amendments made to it. It was ordered to be printed with those amendments, and then to be submitted to the Works and General Purposes Committee at their next meeting for their approval, which was again immediately before the recess of that year. The Works and General Purposes Committee were not able to take it into consideration before the recess, and it stood over until after the recess, and the Works and General Purposes Committee considered it upon the 22nd of November 1875.

4472. Did they come to any resolution upon it then?—They came to the resolution that it was inexpedient to adopt it in its present form, and it was referred back to the sub-committee for further consideration and report.

4473. Were there any definite grounds stated upon which they objected to the scheme as submitted?—It was a very general discussion which took place at the Committee, but I think that mainly, I may say, speaking from memory, the reason why it was sent back was that it really called upon the men to pay back subscriptions; those were amendments which were added after the scheme was prepared by the accountant, and one of those amendments called upon the men to pay back subscriptions from the time when they entered the service of the brigade, not only of the Board but of the previous brigade.

4474. Were those back subscriptions supposed to be calculated upon a new scale?—They were supposed to be calculated upon the new scale, and I remember calculating it out; I remember calculating that the superintendent would have had to pay something like 100 *l.* before he could have got the benefit of the scheme; that was one of the reasons why it was sent back, but I think also that it was too liberal.

4475. As I understand, these amendments were amendments moved upon the draft report of the accountant?—Yes, by members of the committee.

4476. And in consequence of this being considered injudicious it was referred back to the committee?—Yes, it was in November 1875.

4477. What action was then taken?—Then the matter stood over for a considerable period of time, namely, to the 22nd of March 1876. During that interval of time, one of our members, the Chairman of the Finance Committee of the Board, was taken suddenly very ill, and we lost the advantage of his services during the whole of that year till almost April of this year, and Mr. Newton was also taken ill and died. The matter stood over in consequence of these

circumstances

circumstances until Mr. Thompson, the Chairman of the Fire Brigade Committee, so earnestly pressed that the matter should be taken up again, that a committee was summoned for the 27th of March 1876, and not wishing that the committee should meet with nothing before it, I thought it was my place then to initiate a scheme myself, and I did so initiate that scheme which has been established; I placed it before the committee; I had it printed beforehand; it was amended and approved of, and ordered to be submitted to the Works and General Purposes Committee.

4478. What action was taken upon that?—The sub-committee referred the matter to the Works and General Purposes Committee, and asked for their approval of it. Upon the 27th March, the Works and General Purposes Committee took the matter into consideration, and the scheme was approved without alteration, and was then submitted for the approval of the Board at the next meeting of the Board, which was on the following Friday. The Board met upon the 31st of March (that was the Friday), took this recommendation of the Works and General Purposes Committee into their consideration, and the matter was very fully discussed at the Board. There were one or two important alterations made in the scheme as it was presented. One alteration, perhaps more particularly, which was proposed by Mr. Runtz, and seconded by Mr. Freeman, who has just left the chair, "That the following provision be added to Clause No. 5 of the scheme in substitution for Clause No. 6 thereof, namely, that for a service of less than 10 years a man shall be entitled to a gratuity equivalent to one month's pay for each completed year of service." There was no provision in the scheme of the committee, or sub-committee, for pensions to any members of the brigade who had served less than 10 years; but it was proposed that if any person was obliged to leave through infirmity before he had completed 10 years' service, that case should be considered upon its merits. That was objected to, and it was determined to allow the provision moved by Mr. Runtz to be added to the scheme.

4479. Was there a resolution come to in favour of this scheme?—Yes, the resolution that was come to on that occasion was: "That a superannuation fund for the men of the Metropolitan Fire Brigade be established, and that the following be the terms and conditions thereof;" and it then sets out upon the minutes exactly the scheme as it is printed in the minutes of this Committee. Then it was moved, also by myself, "That the foregoing scheme do take effect from and after the 1st May next." This was now upon the 31st of March, and then there was this addition made to the matter: "That it be referred to the Fire Brigade Committee, with authority to make any arrangements which may be necessary in the matter." And perhaps you would allow me just to say, going back for a moment, that during the time that the sub-committee were discussing this scheme Captain Shaw was invited or summoned to be present at the committee, and he was present during the whole of the time that the matter was considered; and he was also present at the Board during the whole time that the Board considered the matter, and I am not aware that he offered any suggestions other than one which was, that the matter should be referred to the men for their consideration before it was adopted, which suggestion was considered both by the sub-committee first, and by the Works Committee afterwards, and by the Board afterwards again, and was rejected by each of them in their separate turns.

4480. The consideration of this scheme seems to have been carried out a good deal more rapidly than the consideration of the former scheme?—That was so perhaps because it was a very liberal scheme on the one hand, and I hope I may say that it was almost a perfect one on the other.

4481. It was, I believe, your scheme?—I had prepared it myself, and I will take it in that point of view, that it was a very proper one.

4482. However it resulted in a resolution being come to, on the 31st of March, in favour of the scheme as amended, and it was then submitted by Captain Shaw to the men; is that so?—No; we declined to submit it to the men; it was Captain Shaw's recommendation to the sub-committee, before any consideration by the Works Committee, that it should be considered by the men, and the sub-committee disapproved of the proposal. It was moved also at the Board, that it should be considered by the men, and the Board rejected that also, and I am quite prepared to support the conclusions both of the committee and of the Board.

Mr. G. B. Richardson. 15 June 1876.

4483. Previously to that you had submitted Mr. Thompson's scheme to the consideration of the men, had you not?—Yes; Mr. Thompson's scheme had been submitted to the consideration of the men.

4484. What was the reason why the men were not called upon to consider this scheme?—Simply this, that the scheme, as proposed by the Board, proposed to give to the men, as an act of free grace upon the part of the Board, a certain very considerable advantage; that is to say, it transferred the amount which they had to their credit at the savings fund into an annuity considerably larger, even for one year's annuity, than the amount that they had got in their savings fund. Even in our private life it is not usual to ask a man when you are going to make him a present, whether he likes it or does not approve of it, and I think it would have been a humiliating position if the Board, having placed themselves in the position of submitting that proposal to the men, should have it said to them, that "its provisions are not such as can be accepted, and we most respectfully decline to accept the offer that you have made."

4485. If it was decided not to submit this plan to the consideration of the men, how did it come before them?—In this way: Captain Shaw was present at the discussion of the Board, and heard all the alterations submitted to the discussion of the Board; he left the offices of the Board on that afternoon, and he applied to Mr. De la Hooke before he left for a copy of the scheme with the alterations which had been made, and without any authority from the Board, and indeed I may say contrary to the instructions of the Board, because the Fire Brigade Committee were instructed to make any arrangements which might be necessary in the matter; Captain Shaw submitted it to the men, and the men took it into consideration immediately, and only the next day, without any possible time for them to understand its terms or its merits, or whether it was liberal or the reverse, every man in the brigade, from the top to the bottom, superintendents and all, had signed a round robin, or whatever they call it, to the Board, and these are the terms of it: "We, the undersigned officers and men of the Metropolitan Fire Brigade, having had submitted to us the scheme of superannuation agreed upon by the Metropolitan Board of Works on the 31st ultimo, are decidedly of opinion that its provisions are not such as can be accepted by us; we are, therefore, compelled most respectfully to decline the conditions contained therein. We also beg leave to express our desire that through you the Board should be informed that the scheme submitted by us in our memorial to them in February 1874 is, in our opinion, a very moderate one, and that, in justice to ourselves, we are compelled to adhere to it." They did not understand that their own scheme, as suggested in their own memorial, was not nearly so liberal as that which the Board had approved; nothing equal to it.

4486. I suppose you would say that the object of previously consulting the men, with regard to Mr. Thompson's scheme, had been that in establishing a scheme of superannuation, the purpose of which was, if possible, to retain men in the brigade, it was thought advisable that you should ascertain the opinions of the men in the brigade with regard to the scheme, so as to see that you would attain the object you had in view of keeping them there, they being satisfied with the conditions suggested?—Yes, that would be very good, if these men were really to pay a *quid pro quo* for what they were to receive, but that scheme never asked them to pay it.

4487. As I understand the scheme, it is generally accepted to be a sort of deferred payment, which takes the place of an increase of wages; and as in all probability the wages would have to be increased, in order to retain the men in the brigade, it is considered that that can be effected more advantageously by leaving the wages as they are, and giving a deferred payment, such as the superannuation scheme affords, receivable by the men after completing a certain term of service, and, therefore, the same object with regard to this scheme of ascertaining whether the men had accepted it as sufficiently satisfactory to retain them in the force, would apply as in the former scheme; is not that so?—Yes, if the facts were as you have stated them, but they were not so; you must understand the position of these men with regard to the Board; they had entered the service of the Board with nothing but one simple contract, that they were to receive their wages, and that they were to take with them, when they left the service of the Board, the money that was to their

Mr. G. B. Richardson.

15 June 1876.

their credit in the savings fund. Then they came to the Board and applied, *ad misericordiam*, as it were, to the Board to give them something more, that is to say, something more in the shape of a superannuation scheme. The Board prepares a scheme; they agree to it; it is of the most liberal character; it proposes that each of the men shall give that which is to the credit of his superannuation fund, and that that sum of money shall be transferred to an annuity, if he leaves, and I will show you that that annuity would have been in many cases twice as much as the money they had to their credit in the savings fund.

4488. I ask you that because we differ slightly perhaps in our views with reference to the object of a superannuation scheme, but I imagine that you have in considering this superannuation scheme, besides considering the request *ad misericordiam* of the men for this addition to their pay, taking into consideration the statement of their superintendent, Captain Shaw, who pointed out to us that the men were leaving the brigade rapidly from various causes, and that one of the causes, which it was admitted was at the bottom of it, was the want of some fund, such as a superannuation fund, which would hold out to the men a prospect of receiving something after they had completed a term of service, which would influence them sufficiently to keep them up to the time when they could claim the pension, as in the police force. Was it not considered from that point of view as well as from the point of view of its being an *ad misericordiam* plea upon the part of the men?—That is so, but I think the Committee should have in view the clause of the statute, which says in the 8th section, "the Board may make such regulations as they think fit with respect to pensions or allowances to be paid to men in case of retirement." Now assume that a man had been in the brigade till he was 60 years of age, and was infirm, there being no superannuation scheme. If Captain Shaw had taken the case of any such man up to the Fire Brigade Committee, the Fire Brigade Committee would have considered the case of that man, and it is not to be supposed that the Fire Brigade Committee would have allowed that man to have been discharged destitute without any means whatsoever. I cannot pledge my Board; but I think, knowing the liberality of my colleagues on the Board, that you may be perfectly certain they would have done justice to that man, but they would not have done what this scheme proposes to do, that is to say, give the man two-thirds of his pay if he had been 30 odd years in the service.

4489. I understand you to say that the Board have always looked upon this simply as a bonus which they were going to give to the men, and that they have not looked upon it from the point of view from which superannuation is generally considered, namely, that of being a means by a deferred rate of wage of retaining men in the service?—That question of retaining men in the force was certainly considered, because Captain Shaw represented to the Board that there was upon that point a very great necessity for a superannuation scheme, but I think that the evidence that I have here in my documents, which I shall produce afterwards, will show that that is hardly a correct statement of the facts.

4490. What I come back to is this, that if the brigade considered it from that point of view, and thought that it might be advisable to adopt the superannuation scheme in addition to the wages for the purpose of meeting the complaint of Captain Shaw, that he lost his men so frequently, then I should like to know why, in establishing a superannuation scheme, the Board upon this occasion did not take the same steps as they did formerly to ascertain whether that scheme would produce the desired result of keeping the men in the service?—I can only answer that question by saying that the scheme was so liberal in its character that to have submitted it to the men would have been, in my judgment, an act of simplicity on the part of the Board.

4491. It was sufficiently liberal, so far as the opinion of one side of the question was concerned?—It was sufficiently liberal upon all sides of the question. It was impossible that the men could have refused it if they had understood it.

4492. That is a point upon which there might be a difference of opinion upon the part of the men; but however that may be, what did take place in consequence of this statement by the men to the Board?—I also moved at the Board by special motion on that occasion, "That the Board do contribute the sum of 500*l.*

Mr. *G. B. Richardson.* 15 June 1876.

per annum to the superannuation fund of the fire brigade;" that was upon the 31st of March, and upon the 4th of April the Fire Brigade Committee met and were informed by Captain Shaw that he had made the members of the brigade acquainted with the scheme, and that he had received a communication, signed by all the officers and men on duty, to the effect, "That the conditions of the scheme are not such as they could accept, and that they are compelled, respectfully, to decline the conditions contained therein;" and that they are compelled to adhere to the conditions contained in their memorial submitted in February 1874, and upon that they determined to report it to the Board. They brought up the report to the Board on the 7th April 1876; the report was considered very carefully, and it was proposed by Mr. Thompson, who brought up the report, "that it be referred to the Fire Brigade Committee to ascertain the precise objections" entertained by the officers and men. I took an opposite opinion upon the course which the Board should pursue, and I had given notice of motion to the effect that "the matter be referred to the Works and General Purposes Committee for consideration and report." The motion of Mr. Thompson was lost, and my amendment was carried.

4493. That was, was it not, to refer to the General Purposes Committee the report of the Fire Brigade Committee, in which they stated that Captain Shaw had represented it to the men, and that they declined it?—Yes.

4494. What action was taken by the Works and General Purposes Committee?—The Works Committee met on the following Monday, that was in Easter week last; the Board then met on the Wednesday instead of on the Friday, which was Good Friday, and the report was brought up on the Wednesday, which was the 12th of April, and it states, almost word for word, the report of the Fire Brigade Committee, and concludes by saying, "Looking to all the circumstances of the case your committee, after a careful consideration of the matter, have arrived at the conclusion that the best course will be to postpone further action with regard to this scheme until after the Committee appointed by the House of Commons relative to the fire brigade have presented their Report." It was not possible for the Board to adopt the resolution upon that occasion, because it varied the previous resolution, which would have required a special meeting of the Board, and therefore the further consideration of it was deferred until the first meeting after the Easter recess. Upon the 28th of April the Board met and considered the Report of the Works Committee, and the recommendation was carried although there was a division upon it; it was resolved that any further action with regard to the scheme should be postponed until after this Committee had made its Report.

4495. Was Mr. Thompson present at that meeting?—Mr. Thompson was present at the meeting on that occasion, and seconded the motion, which was moved by myself, bringing up the motion from the committee.

4496. He had previously suggested a different course, had he not?—That it should be referred to his own committee to deal with, true, but he concurred in the view that it would be better that it should go to the Works Committee than to the Select Committee.

4497. Therefore, practically, by that decision of the Board, the matter is hung up during the sitting of this Committee?—It is so.

4498-9. Now with regard to the superannuation scheme which you have prepared, will you state to the Committee some of the grounds which led you to draw that up?—First of all, I think it is desirable that the Committee should understand that a superannuation scheme must mainly have relation to those who are to enter the service of the Board. It is very important to consider that matter, I think, first of all, because if a superannuation scheme were established which the men who might be sought to enter the service of the Board should object to, it might very much deter a number of men being obtained to join the service; and more than that, if you do receive men into your brigade under the terms of a superannuation scheme, a contract then absolutely exists between them and yourself which it is impossible to alter as long as that service continues. They can claim the benefits of that scheme; they have their weekly contributions deducted from them; and you cannot alter it, and although it may be exceedingly costly, and very much in excess of what was anticipated, it must be adhered to; you can only cease the terms of the scheme in respect of those who follow afterwards during any given

Mr. *G. B. Richardson.*

15 June 1876.

given time, but as long as you are engaged with them in the scheme before them you must adhere to it. Then next you come to those who are in the force, and there you see a marvellous difference in the two schemes. These men who are in the force have been subscribing their 6 *d.* a week, every rank alike, to the savings fund, and the main points of the scheme are that, for that 6 *d.* a week, if they chose to hand over the amount which they have standing to their credit in the savings fund, they shall be entitled to the full benefits of this scheme, just the same as if they had paid all the contribution from the first day that they entered the service of the first brigade; the difference between the two being something like from one-third to two-thirds, it gives them all that additional benefit, so that it is a very large gift to the men; it is an act of grace which certainly, as I said before, I did not expect the men would hastily and inconsiderately have refused. But to illustrate that, I think it would be well for me to state one or two facts, which will show the matter better than anything else that I can state. I will give the Committee the cases of two men, named, respectively, Bridges and Flynn. Bridges is one of our superintendents, and Flynn is one of our first-class engineers in the service; Bridges entered the service of the brigade on 4th December 1837, and has therefore been in the service of the brigade 38½ years. He brought into the Board from the old service to his credit, at the savings fund, 33 *l.* 5 *s.* 3 *d.*, and there has been added to his credit, since he has been in the service of the Board, 22 *l.* 5 *s.*, so that he has at present standing to his credit, in the fund, 55 *l.* 10 *s.* 3 *d.* Now the terms of this scheme call upon him to pay first of all the amount that was standing to his credit at the savings fund since he has joined the Board, which is 22 *l.* 5 *s.*, plus 6 *d.* per week from the date of his first appointment, which is 35 *l.* 17 *s.*, making together 58 *l.* 2 *s.*, and for that sum of 58 *l.* 2 *s.*, he having 55 *l.* 10 *s.* 3 *d.* to the credit of his savings fund (that is an additional payment in his case of 2 *l.* 11 *s.* 9 *d.*), he, Superintendent Bridges, being over 60 years of age, could, if he thought proper, have instantly sent in his resignation, and retired if he had accepted this scheme, and would have retired with 133 *l.* 13 *s.* 4 *d.* per annum, and the only money which the Board would have received in respect of that annuity of 133 *l.* 13 *s.* 4 *d.*, would have been the sum of 58 *l.* 2 *s.* But he rejected it, and in writing under his own hand he says that having considered it he is decidedly of opinion that the conditions of the scheme are not such as he can accept, and that he must respectfully decline to receive it.

4500. I suppose any individual member of the brigade would not be guided so much by the way in which it affected his individual case, as by the way in which it affected the force?—I have no doubt that if you asked Mr. Bridges he would tell you that he acted as one of the whole body rather than in his own individual interest; but I take it that having been in the force some years, and being a man of intelligence, which he must have been in order to have arrived at that position, it is simply impossible that he could ever have understood it, or he would never have done such a foolish thing as that.

4501. Is it not more likely that a man who was of such intelligence, and so good an officer, would be more likely than anybody else to look at the general interests of the force, and the ultimate interests of the men with whom he was associated, rather than to any individual question of his own receipts?—But the case of Mr. Bridges is a type of all the others; the others are all alike. I have selected another one, about the same age, of the name of Flynn. He is a first-class engineer, and I think I am correct in saying that he is the oldest man in the brigade, and from what I hear I should anticipate that it would have been desirable that he should have retired and been superannuated before this, for he is not an able and active man, as I hear. I am given to understand that he is over 64 years of age.

4502. I suppose his case has never been brought before the committee?—His case has never been brought before the committee by Captain Shaw. His case is this: when he came into the service of the Board he brought with him from the late body 40 *l.* 12 *s.* to his credit, and there has accumulated since then to him the sum of 23 *l.* 17 *s.* 7 *d.*, therefore he has now standing to his credit in the fund, or there was in May 1876, 64 *l.* 9 *s.* 7 *d.* Under the terms of that scheme he would have been required to hand over to the credit of the superannuation scheme the sum of 23 *l.* 17 *s.* 7 *d.*, that is the amount which had been added since he joined the Board, and 6 *d.* a week prior to that time, which would

Mr. *G. B. Richardson.*

15 June 1876.

would be 35 *l.* 1 *s.*, making altogether 58 *l.* 18 *s.* 7 *d.* And this is his case, that by the payment of 58 *l.* 18 *s.* 7 *d.*, which would have enabled him to take out of the savings fund 5 *l.* 11 *s.* and put it into his pocket as so much cash, he would have received two-thirds of his then pay, which would have given him an annuity of 85 *l.* per annum.

4503. Let me ask you, with regard to that sum of money which you say he brought over with him, was that a direct contribution by himself to a fund out of his receipts?—The insurance offices, when they had charge of this brigade, had what they called, but improperly called, a superannuation fund. It really was exactly the same as what we have now, which is a savings fund. The Board altered the term from what it was improperly called; it is no superannuation; it is nothing more than a fund which was recouped by the 6 *d.*, a week deducted from every man in the service. That was invested in a fund, and so much carried to the credit of each man, but at that time it seems that every one of those men was allowed to put his own money in as well; the men sometimes received gratuities in those days, and they put those into the fund. The result is, therefore, that we find that whilst Bridges, who had been 38½ years in the service, and Flynn, who had been in the service 38 years, there being therefore only half a year difference between them, and therefore having contributed about the same sum, Bridges only brings to the fund 38 *l.* 5 *s.* 3 *d.*, he being a superintendent, whereas Flynn, being a first-class engineer, brings 40 *l.* 12 *s.*, showing that he had put other moneys into the fund under the old régime than Bridges had done.

4504. Did the original brigade, or has the Metropolitan Board, as regards what you call the savings fund scheme, contributed anything in addition to the men's contributions?—No.

4505. Then it is practically the sums contributed by the men, or so much as has been deducted from their wages, and placed to a credit account in their names, to be handed over to them with whatever interest might accrue at the time they left the service?—That is the contract. It is simply a continuance of that which had been in existence before the men joined the service of the Board. They had had this money deducted before, only I do not think that previously much interest was accumulated, whereas now we have been very careful. The money is invested in Metropolitan Consolidated Stock, and there is a ledger account kept of it, and so much is added; not only the 6 *d.* a week, but interest upon it is added, and the accountant knows to a penny how much each man in the brigade is entitled to.

4506. What I understand the scheme to propose is, that that sum of money should be handed over to the new superannuation fund, and should stand in the same position as regards the money there, as it did in the old scheme?—That is the proposal generally, but there are, as I have explained here, the circumstances of the men not being all on a par; that is to say, some men not having brought in so much as others. We are obliged to put them on a par, and say that for the period of service prior to the service under the Board they shall pay 6 *d.* per week.

4507. That would be a certain injustice to the men who had placed some funds out of their private means to the fund, to have them handed over to the Board as equivalent to their contribution?—Clearly so. I have the case of a man named Wood, a first-class fireman, who had brought in 44 *l.* 15 *s.* He had been only in the service of the Board 26 years; and there is another man who has got 40 *l.*, and it would have been most unfair to have taken that money and transferred it all to the superannuation scheme, when the man who was to take a much larger benefit had not put in anything like the same amount.

4508. Are you aware that in the establishment of the police forces throughout the country, when the old constables were taken over, no such contribution was demanded from them, but that they were placed upon the superannuation fund?—I am not aware of that. I take it that this proceeding was for the benefit of the men in order that when they left the service of the brigade they should not go without something reasonable to enable them to provide for the few days which might intervene before they got some other employment.

4509. In fact it was on the same principle as that on which your present scheme proceeds, that is to say a stoppage having taken place, that stoppage should go to the credit account of the superannuation fund, that the fund should

be

be charged according to the scheme that you have laid out with the pension in the future?—Yes, quite so.

4510. I wish to ask you whether that letter written by the men was accepted as final by the Board, or if representations were made to the men, pointing out that they had not taken sufficient time to consider the scheme?—I consulted our chairman unofficially, feeling strongly that the men had acted most inconsiderately, or rather I should say hastily, and I asked him to allow me to take some action in the matter, and I am right in saying I believe that Mr. De la Hooke was instructed to go round and see some of the men and point out the foolishness of their act, and to ask them, indeed to urge them, to withdraw that letter, but we were unsuccessful in inducing them to do so.

4511. Will you further explain your scheme?—Yes, it will be seen that I am referring to the scheme, printed at page 56 of the Evidence given before this Committee, on the 1st of May; the first condition is: "That no man (except as provided by Clause 9) shall be entitled to a pension or gratuity unless it be certified by the chief officer and one of the medical officers of the brigade, that he is incapacitated by age or infirmity (such infirmity not being caused by his own misconduct) for the proper discharge of his duties." The only alteration which the men suggested in that is this: it is recommended I observe, for instance, by Captain Shaw and approved by him, that an alteration should be made so as to exclude the words "except as provided by Clause 9." Now those words are absolutely necessary to be retained in order to make Clause 1 consistent with Clause 9. No. 1 without it would virtually say this: "No man in the brigade shall ever be entitled to a pension or gratuity unless it be certified by the chief officer and medical officer that he is incapacitated by age or infirmity;" but Clause No. 9 opens the door to a man having superannuation otherwise than by the medical officer's report, and states that "any man not incapacitated, as aforesaid, who shall leave the service after 35 years' service, except for misconduct, shall, provided he be not less than 60 years of age, receive a pension of the same amount as that to which he would be entitled if he left under a certificate of age or infirmity, as above provided." It is perfectly clear, if you read the scheme, that unless those words, "except as provided by Clause 9," are retained, the whole scheme would be inconsistent with itself. Then, with regard to Paragraph No. 2, "In calculating the amount of pension or gratuity, the regular pay of the rank to which the men belong shall alone be taken into consideration, exclusive of all special pay and allowances;" the alteration which the men suggest is this: That the amount of pension shall not be only in proportion to the pay and allowance, but that the contribution shall be exclusive of the special pay. Now, Captain Shaw in his evidence did not say a word about whether the men were prepared to pay the additional contributions, based upon that additional amount of salary or pay that they received.

4512. As I understand the evidence of Captain Shaw, as representing the men, and the evidence of the men afterwards, it went to this, that they were prepared to pay the 2½ per cent. contribution?—But they never said they were prepared to pay 2½ per cent. upon those additional amounts which the Board make them, which amount to about 40 *l.* a year; taking that at 2½ per cent., and it amounts to 20 *s.*, and Captain Shaw states that the men are willing to pay 2½ per cent., although he says that he does not understand how it is possible that the men could pay as much as that. If the recommendation which Captain Shaw made is to be accepted, that these men are to have their pensions or gratuities based not only upon their pay, but their allowances as well, it will stand to reason that they will have to pay upon the same basis, and if they pay upon the same basis you will find that the contributions will be increased by fivepence a week.

4513. You represent to the Committee that the allowances would practically, then, be considered as part of their wage?—Yes, allowances would practically be considered as part of their wage.

4514. And therefore the deductions from the wage would be deducted from the full sum, whilst pensions would also be paid upon the full sum?—Yes.

4515. But that would only affect particular grades in the service?—That would only affect those who are termed officers; that is to say, superintendents, first-class engineers, second-class engineers, and a very large portion of those who are called first-class firemen, who are made officers.

Mr. *G. B. Richardson.*

15 June 1876.

4516. Then it seems to result in this, that in your opinion it is merely a matter of consideration for the men whether they are able to contribute upon a larger amount?—Practically speaking, the remark I made amounts to that if they are to get the larger benefit they must make the larger payment.

4517. The difference in the scheme which you suggest and the scheme of the men is merely a difference in the extent of their contribution?—Yes. Then, with regard to No. 3, this scheme was based upon a 3 per cent. contribution; the difference between the 3 and the 2½ per cent. is something like 130 *l.* a year upon the whole brigade; 3 per cent. gives, as nearly as possible, 970 *l.* per annum, and a 2½ per cent. contribution would give one-sixth less; about 150 *l.* less, and the scheme of the Board in that respect will, I think, compare very favourably, in every respect, with that of the police and the men's scheme. I think I should lay before the Committee a return which I have prepared, contrasting the rate per cent. which the Board propose to give in respect of those payments by their scheme, and what would be given by the police scheme, and what would be given by the men's scheme. I will read one or two of them to show the effect of them.

4518. Is that calculated upon your No. 2, which is without the allowances?—Yes, without the allowances; that does not affect the question, because I have taken it at so much rate per cent. Thus, for instance, after 10 years' service by the Board's scheme the rate per cent. to which a fireman would be entitled would be 16 *l.* 13 *s.* 4 *d.* The police scheme gives nothing, but the men's scheme proposes that they should have 25 per cent. Then after 11 years the Board's scheme gives 18 *l.* 6 *s.* 8 *d.*, the police scheme nothing, and the men's scheme 27 *l.* 10 *s.* per cent. Then I will go to the 15 years, when the police scheme comes into operation. At 15 years the Board's scheme gives 33 *l.* 6 *s.* 8 *d.*, the police scheme only gives 30 *l.* per cent., and the men's scheme would give 37 *l.* 10 *s.* per cent. At 20 years the Board's scheme would give 41 *l.* 13 *s.* 4 *d.* per cent., the police scheme would give 42 *l.*, and the men's scheme would give 50 *l.* Then at 25 years the Board's scheme would give 54 *l.* 3 *s.* 4 *d.* per cent., the police scheme would give 60 *l.*; they have got beyond us, because they get to their maximum at an earlier period, and the men's scheme has arrived at their maximum, which is 62 *l.* 10 *s.* The Board's scheme goes on. At 27 years' service the Board's scheme gives 59 *l.* 3 *s.* 4 *d.* per cent., the police scheme 64 *l.* At 28 years' service the Board's scheme gives 61 *l.* 13 *s.* 4 *d.* per cent., and the police scheme, which is their maximum, 66 *l.* 13 *s.* 4 *d.*, or two-thirds per cent. Then the Board's scheme goes on to 29 years, which gives 64 *l.* 3 *s.* 4 *d.* per cent., and at 30 years, 66 *l.* 13 *s.* 4 *d.*, or two-thirds of the maximum of the Board's scheme, and in that way 4 per cent. more than the men's scheme.

4519. The maximum is arrived at in a longer period than in the police scheme?—The maximum is arrived at in a longer period than in the police, and longer than in the scheme which the men propose.

4520. Will you hand in that Table?—I will. (*The same was handed in.*)

4521. In referring to the police scheme, I suppose you are aware that the police scheme is one which is at present under consideration, and is also one with which the men do not express themselves satisfied as a body?—I heard that stated, and I sent one of the clerks to Scotland Yard to ask if that was the case, and I had a message saying, "I have seen Mr. May, chief clerk at the Metropolitan Police Office, and he informs me that there is no alteration proposed whatever in the present arrangements with regard to the superannuation of the police, and that the Board has been supplied with full information as to the existing rates."

4522. Technically, that may possibly be right, but are you not aware that during the course of the last Session a Committee of this House was sitting upon the subject, and had before them a great number of superintendents, and other members of the police, who were examined for the purpose of hearing their complaints of the existing scale of superannuation?—I was not aware of it myself, but I have heard it stated. I thought it advisable just to ask that question of the police, and they seemed to be ignorant of it themselves.

4523. You must surely correct that; it is impossible they could have told you that they were ignorant of it themselves, when the chief officer

Mr. *G. B. Richardson.* 15 June 1876.

officer and superintendents of their force were examined before the Committee upon the point, that their present scale was not satisfactory, and that they wished to place before the Committee representations which would have the effect very much of producing the results which the scheme of the men of the fire brigade would carry out. I think you must take that letter as showing that there is no present scheme which proposes an alteration. I do not know how you can carry it further than that?—Now I will proceed with the scheme. No. 4 says: "Every man's service shall, for the purposes of this scheme, date from the day of the scheme coming into operation, but he may become at once entitled to have his service reckoned from the time he joined the brigade, upon payment as follows." And the following words seem to have led to some misunderstanding on the part of the men; and I observe that an honourable Member of the Committee stated that they are capable of another interpretation than that which they were intended to bear, but I venture to think that they will not bear any other interpretation. It is quite clear that they are to pay, if they joined since the 5th of July 1865, a sum equal to the amount standing to their credit in the firemen's savings fund, but if they joined before the date, which applies to the cases which I have illustrated, then, upon payment of a sum equal to the sum put down to their credit since 1865, together with 6 *d.* for every week of service prior to the 5th of July 1865. I do not think that you could express that which was intended to be conveyed by any other words, and it seems to be very clear.

4524. Does not it leave some doubt as to this point; that as it is stated here in every case, however long a man's previous service has been, or however short, before he was transferred, he would have, as I read it, to pay over an equal sum to that which he has paid, and which stands to his credit since 1865?—No, there is only one sum; it is only "a sum."

4525. Equal to the amount put down to his credit since 1865; for my own information I should like to ascertain this. I understand you to say that if a man is in the brigade now, and was in the previous brigade before it was transferred to the Metropolitan Board of Works, he will have to pay under this new scheme a sum equal to the amount standing to his credit in the firemen's savings fund since July 1865?—Not standing, but which has been put to his credit.

4526. It is put here "standing"?—The first one is a sum equal to the amount put to his credit in the firemen's saving fund."

4527. The first case is a sum contributed by him since the Metropolitan Board of Works had the management of the brigade, and which has been standing to his credit, and which you say should now be handed over to the superannuation fund: and then you go on to say, "but if he joined before that date, of a sum equal to the amount put to his credit since 1865"?—There are two classes of men; there are a certain number of men who have joined since the transfer of the brigade to the Board, and a certain number who joined before the transfer to the Board, and you must deal with them separately; those who joined since the transfer to the Board are to pay a sum equal to the amount standing to their credit in the firemen's savings fund, that represents 6 *d.* a week deducted from their pay, plus the interest upon that, and the others will have to pay 6 *d.* a week, and the interest accumulated upon that since, plus 6 *d.* a week for all time prior to the transfer to the brigade.

4528. That practically means that you, having in your hands a certain sum of money standing to the credit of those men, will transfer that sum to the credit of a new account which you will open as a superannuation account to be established if they agree to this; "every man's service shall, for the purposes of this scheme, date from the day of the scheme coming into operation, but he may become at once entitled to have his service reckoned from the time he joined the brigade upon payment, as follows"?—If he chooses to pay that sum into the superannuation scheme, he is entitled to all the benefits of that scheme when he makes that payment, but not till he makes it.

4529. It does not prejudice the man, because he does not lose what he is now entitled to, but he becomes entitled to a pension after he has been a certain time in the force?—The last words of the scheme are, "The amount at credit of the firemen's savings fund shall remain at the men's disposal as hitherto;" that is sacred to the men. We cannot deal with it, except by their consent. If

Mr. *G. B. Richardson.*

15 June 1876.

they choose to hand it over to us, under the terms of No. 4, we will accept it, and give them the benefit of the saving fund; if they do not choose to hand it over to us, they can pay it in any other way if they can get it, but if they do not hand it over to us they are not entitled to the benefit of the saving fund, except from the time the scheme is in action.

4530. Then the men, as I understand you, now have the option of paying it out of this fund, but they may leave that as the saving fund, and make the payment direct?—Quite so; they are not entitled to the money in the saving fund by the contract which exists between them and the Board until they leave the service of the Board, but if they choose to transfer it to the superannuation fund they can do so, and get all the benefit of the superannuation scheme from the time they entered the brigade.

4531. Suppose a man entered in 1865, which would make him 11 years in the brigade, would the amount he would derive under the new superannuation scheme be in excess of that amount?—Yes; I have marked that out.

4532. So that, practically, there will be no direct loss to the man on what he could now do, which is to take away his savings on leaving?—I have worked it out for 10 years. Assume that a man has been 10 years in the brigade, and assume that of those, two years he has been in the fourth class, his contributions will be 9 *d.* a week, and that would amount to 3 *l.* 18 *s.*, and then that he has been four years in the third class, his contribution will be 10 *d.* a week, by which he will have paid 8 *l.* 13 *s.* 4 *d.* Four years in the second class at 11 *d.* a week, by which he will have paid 9 *l.* 10 *s.* 8 *d.*; that together adds up to 22 *l.* 2 *s.* Then assume that interest and compound interest at $3\frac{1}{2}$ per cent. adds to that 3 *l.*, and he would have paid, when he had been 10 years in the service, to the superannuation fund, 25 *l.* 2 *s.* Now, his pay upon that calculation of a fourth-class man would be 81 *l.* 2 *s.* a year, and he would be entitled under the Board's scheme to one-sixth, or 13 *l.* 13 *s.* per annum for life, assuming that he was superannuated for illness under a medical certificate, he would have been 10 years in the brigade, and he would have paid 26 *s.* per annum for those 10 years, that would be 13 *l.*, and there would be the interest upon that and the interest upon it during that 10 years I put at 10 *s.*, which would be 13 *l.* 10 *s.* altogether. That man, therefore, would have had to his credit at the savings fund somewhere about 3 *l.* 10 *s.*, and he would get an annuity under the Board's scheme of 13 *l.* 13 *s.* for life.

4533. What I wished to ascertain was, whether a man who at this moment, as I understand, might, on leaving, take out a sum equivalent to what might be standing to his credit, would not be a loser by paying that over, so that it became the property of the superannuation fund in the future?—I think I am right in saying it would depend very much upon the length of service of the man, but, as I have shown in Bridge's case, the amount to the credit of his savings' fund is not one-half of the annuity he will be entitled to, and there is no case in which it will not be certainly half as much more to the advantage of the men.

4534. Now, with regard to the men's proposal, I understand you wish to refer to that?—That in No. 5, going over the 10 years; there is very little to say upon that excepting this, that the men propose that their maximum shall be arrived at at 25 years, whereas we put it at 30 years.

4535. Should the man you have represented as getting an annuity of 13 *l.* 13 *s.* leave his service from incapacity before that time, would he lose the 14 *l.* he had contributed?—No, he would not.

4536. In passing it over to this superannuation scheme he does not lose control over it?—No; you must draw a distinction between those in the service and those to come. When a man has been in the service 10 years, and the deductions have been made from his wage, and he leaves the service of the Board, he loses all the money he has paid, because the Board has had the risk of his incapacity and his death, and have received his contributions upon those risks; therefore if he leaves the service he must leave his money behind him to the credit of the fund.

4537. Under those circumstances, he is no more prejudiced than the police are?—No; but now, speaking of the men already in the force who have this money in the savings fund, that is sacred, but if they choose to transfer it to the superannuation fund, and then, after having transferred it to the superannuation fund,

fund, find they can do better for themselves, and get service elsewhere, they would be in the same position as the men who have entered after the establishment of the superannuation fund. Now, comparing the men's scheme with that of the 10 years, upon the Board's scheme, two years in the fourth class, four in the third class, and four in the second, by the men's scheme a man would have paid 18 *l.* 14 *s.* 3 *d.*, instead of as under the Board's scheme, 22 *l.* 2 *s.*, and adding the interest, 2 *l.* 10 *s.*, to that 18 *l.* 14 *s.* 3 *d.*, it would bring the amount that the Board would have received under the men's scheme to 21 *l.* 4 *s.* 3 *d.*, as opposed to what they would have received under the Board scheme, namely, 25 *l.* 2 *s.* Now, under the Board scheme, as I have said before, the man would be entitled to one-sixth of his pay, which would be at 81 *l.* 18 *s.* per annum, 13 *l.* 13 *s.* for life. Under the men's scheme he would have been entitled to one-fourth of his pay, or 20 *l.* 9 *s.* 6 *d.*, instead of 13 *l.* 13 *l.*, and the difference in the payment between the two it is important to observe, because Captain Shaw has made some remarks upon that; the difference in payment spread over the whole 10 years is 3 *l.* 18 *s.*, or 7 *s.* 9 *d.* per annum, and 7 *s.* 9 *d.* per annum comes to 2 *d.* a week. Captain Shaw rather stated that he could not see how these men could possibly afford to pay the difference between 3 and $2\frac{1}{2}$ per cent.; but when you work it out it comes to 2 *d.* a week, and you might say if these men forewent half a pint of ale a week, it would meet it all; it is really so trifling that it is not worth considering. I have worked it out for 20 years, taking both schemes. I would take the case of a superintendent. Under the Board scheme a superintendent would, taking a number of years, which are not what the present superintendents have served, because they have gone up quicker to the higher ranks, but they will be slower in the future, before they had obtained the benefits of the scheme, and assuming that they have been in the service 36 years, their principal and interest would amount to about 200 *l.*; the money they would have paid would amount to 120 *l.*, and the interest upon that would be 80 *l.*, making 200 *l.*; and for that sum of 200 *l.* a superintendent would be entitled to an annuity of 132 *l.* 13 *s.* 4 *d.* for life. According to the men's scheme he would have paid one-sixth less, namely, 167 *l.*, and would be entitled to an annuity of only 125 *l.*, instead of an annuity of 132 *l.* 13 *s.* 4 *d.*; in other words, he would have paid 17 per cent. less, and would receive 5 per cent. less; that is the difference between the two schemes, the men's scheme and the Board scheme, as regards the superintendents.

4538. The Board scheme is calculated upon a 3 per cent. contribution?—Yes.

4539. And theirs upon a $2\frac{1}{2}$?—Yes.

4540. Sir *James Hogg.*] What service have you taken?—Thirty-six years I have taken for a superintendent. Then upon the question, which is rather important, of whether the men should be allowed to retire from the service with full annuities at 25 years instead of 30, or whether the age of 60 should be allowed to remain in the scheme, it is important, I think, to consider this especially in connection with what Captain Shaw has stated as the main object, in his mind, of the superannuation scheme.

4541. *Chairman.*] That is to say, to retain the men in the brigade?—Yes; I must make this remark, that the men take a totally different view of the benefits and advantages of a superannuation scheme from that taken by Captain Shaw; they look to it as getting the men out of the force and to take the superannuations, so that they may get a constant flow of promotion, whereas Captain Shaw's terms and the men's are entirely, in fact, in antagonism upon that point. One suggests that it is for the purpose of keeping men in the brigade, the others saying that they look to the superannuation scheme to remove them from the brigade.

4542. Are you aware that the men have given evidence before the Committee that the probability would rather be, if a man felt himself equal to the duty, that he would remain in the brigade, for the purpose of getting the full amount of his pay, as long as he felt himself equal to the work, rather than leave the brigade on being entitled to a pension?—I read that evidence, but I gathered it not quite, perhaps, in the way you have represented; but there are no doubt many men who, being entitled to an annuity after so many years' service, would, if not quite well, and able to obtain a medical certificate, not attempt to remain in the brigade long enough to get the benefit of a superannuation scheme, but would leave the force, and so promote the flow of promotion.

Mr. *G. B. Richardson.* 15 June 1876.

4543. Do you not think that if a pension were insured to them as a certainty when they did leave the brigade, the larger amount of pay which they were in receipt of would influence them to remain in the brigade as long as they felt equal to the duties?—There is no doubt that a superannuation scheme must induce the men to remain.

4544. Should there be no certainty I can understand their leaving as soon as they could make sure of superannuation from fear that they might ultimately lose it altogether; but supposing them to be, as I have suggested, sure of a pension when they did retire after a length of service, do you not think that the inducement would not be lost sight of, of the larger amount of wages that they would be in receipt of?—I think it would be a very dangerous thing to establish the principle that a man has, as Captain Shaw suggested, an inalienable pension, even though he is continuing in the brigade and that he really could misbehave himself or otherwise, and almost snap his fingers at the Board because he has an inalienable annuity. I understood Captain Shaw to have expressed his opinion to that effect.

4545. I think that was limited to a certain extent, and I will put it to you whether it was not rather this, that Captain Shaw represented as the view of the men, that after they had become entitled to claim a pension on being invalided, or having arrived at the fixed period, whatever it should be, if they then continued voluntarily in the brigade they should not, on misconduct, except gross misconduct, lose the pension that they might have taken away at the time when they had arrived at the right, and that if they continued in the public service after 35 or 40 years, whatever term may be fixed, they should be entitled to claim the same amount of pension on leaving, even if they had committed some slight misconduct, as if they had left when they arrived at the time of the pension becoming due?—Captain Shaw, I think, went a little further than that; but I think when a case of that kind occurred, of a man having slightly misconducted himself, and whose past services suggested that he should in some measure be considered, it would be very much better to leave a case of that kind to the Fire Brigade Committee. I am quite sure that they would give it every fair and favourable consideration on behalf of the man.

4546. What has been always represented, and I believe was intended to be represented upon that occasion was, that it seems to be an injustice to a man who is entitled, as you say, to take away a certain pension at a given time, that he should lose that amount in consequence of some slight fault after that time, at the caprice of a Board or any authority, he continuing after he could have taken it away as a right, to remain in the service for the public good?—It does seem so, in the way you have put it; but then you have to suppose that there is that caprice on the part of the chief officer or the Board, and I do not think that a case of that kind would ever arise, and I think it is a very dangerous procedure, because it is just within the range of possibility that there might be this caprice, to make it absolutely impossible that a man could lose his annuity. I think the danger would be very much greater than the advantage which could arise from it.

4547. We are starting always from the idea that this superannuation scheme is with a view of satisfying the men, and therefore keeping them in the brigade, and if the men suggest that this hardship of losing their pension if they misconduct themselves after the 35 years, would be considered so great that it would induce them always to leave as soon as the 35 years had been reached, it would, practically, very often have the effect of dismissing a man who had arrived at the higher ranks of the brigade, and who would be a more useful servant than a new man, would it not?—I think it is very much better that a man should have confidence in his employers, and should rely upon them that they would not treat him as though his past services were worth nothing at all.

4548. Does not that go further, and strike at the root of any definite scheme of fixing the period at which the pension should become due; you might say that the men might at any period of service trust to the authority under whom they serve, might you not?—I do not think that there is quite a parity between the two cases; you could not fix a superannuation scheme without fixing the time at which the men will be entitled to leave and take the full pension; it would not be complete without it, but I do not think it would be desirable to give any member of the brigade an absolute inalienable

title

title to an annuity before he has left the service of the brigade; that is the point that Captain Shaw was dealing with; he was suggesting that whilst a man is in the brigade he should have an inalienable right to pension because he had been a certain number of years in the brigade, and that, therefore, a man might misconduct himself however much, or almost to any extent, and you could not alienate that annuity from him; that he might almost snap his fingers at you, and send in his resignation, and claim his annuity.

4549. Was not that rather upon the idea that after you had decided that a man might leave when he had arrived at a certain time and become entitled to his pension, if he staid and subsequently misconducted himself he should not lose the right to that which he might have taken away, lest the man should be induced to leave the moment he became entitled to a pension?—There are two men in the brigade, both having been in it a number of years sufficient to entitle them, if they could leave, to an annuity. On the one principle a man is to be secured hi annuity, and on the other he is not to be secured his annuity. The one who has his annuity secured misconducts himself and goes; the other remains for a lengthened period of time. It appears to me that the case of the one and the other, both of them are to a certain extent similar; the one man who remains in the service gets his annuity because he has completed his full time, the other man who goes because he has misconducted himself can only have his case represented before the Board on its merits, and if it is not a very severe amount of misconduct, I think the Board would hardly at any time deal so with that man as to induce him to believe that they really wanted any protection of that kind. I am sure from what I see of my colleagues, and their acts of lenity from time to time, that no member of the brigade has the least occasion whatever to fear that his case will not be considered with every consideration, kindness, and mercy to the men, rather than harshness and the reverse.

4550. At the same time, allowing all that, you are aware that that is not the opinion of the brigade, and that they have asked, as the police also have asked, that however much they rely upon the generosity and mercy of their authorities, they should have offered to them a fixed rate of pension which they could count upon, apart from the accident of some day or other, the Metropolitan Board of Works not being so generous as they are at the present moment?—The only answer I can give to it, as far as I can form an opinion at the present time, is that I should see so many evils in that course of action that I could not support it as a member of the Board.

4551. In your opinion no system would be satisfactory which did not leave the entire control of granting these superannuation pensions to the authority under which the brigade was worked?—That is my individual opinion. Now, with regard to whether the time should be 30 or 35 years, I wished to draw the attention of the Committee to this fact, that if Captain Shaw's views were to be carried out, and we were to have no members of the brigade to leave the service, except by death, that is to say, that they were all to be retained in the brigade because their interests were so much in that direction by the operation of the superannuation scheme, and that misconduct was not to operate, we will suppose, to compel any of the members to leave, the result would be this, because you must have reference to the expectation of life as by the Government tables.

4552. At what period of a man's service do you mean?—The life tables tell us this, that, assuming men enter the brigade at the average age of 23 years, which is about the average, the expectation of life of a body of men of average health of 23 years of age is 36·80 odd, or practically speaking, it is that one-half of them will live to the age of 60, that is to say, one-half will die before 60, and one-third will live over 60. Then the tables tell you that the average of life at 60 is 13·60.

4553. I suppose you are aware that the averages of life vary much according to the employment?—They do, but these men are all accepted in the brigade, because of their sound health and substantial make, and although they are subject to certain contingencies it is very easy to deduct a few years for that, but taking it in that way we find that if Captain Shaw's views were really to be worked out, and that men were not to leave the brigade except for death, and were to continue in the brigade for the purpose of getting superannuation.

Mr. *G. B. Richardson.*

15 June 1876.

the result of it would be that when sufficient time had elapsed one-half of the men, or, assuming there are 400, 200 of them would really, in course of time, be upon the superannuation scheme, and those men would all be at the top of the brigade, and the average rate of pension would be 85 *l.* 3 *s.* 4 *d.* per year. I have calculated it out upon that scheme so as to show what would be the consequences of Captain Shaw's views.

4554. Supposing all the men remained?—Supposing all the men remained, and only death intervened to drive our men from the brigade.

4555. Besides death there is the certificate for incapacity from ill health?—That would make it rather worse than better. That would involve an expenditure of no less than 17,000 *l.* a year for the superannuation scheme; that is to say, half of the whole pay of the brigade. I only mention that to show that this scheme has been founded upon the circumstances which attach to the brigade at the present moment. We find a very large number of the men of the brigade are leaving; 600 men have left the service during the ten years the brigade has been in the hands of the Board, and unless something of the kind was to continue, it is impossible that this superannuation scheme, based as it is upon these large annuities and small contributions upon the part of the men, could continue. It would simply break down from the want of funds to keep it going. I thought it was desirable to mention that.

4556. Have you taken the ages of the men in your brigade at the present moment?—Yes; I have not taken all, because I could not get them, but I have a Paper giving the ages of a very considerable number of the men at present in the brigade; and that is really a serious thing, because it shows how many of the men are arriving near the age for pensions; there is one man who has had 43 years of service, that is the man Flynn that I have referred to; there is one who has been 40 years, that is Superintendent Bridges; one who has been 39 years, and another 38 years.

4557. Have you got the number out of the brigade of 390 who are within 10 years of 60?—No, I should not have been able to get that. This Table shows me that there are 67 men in the brigade over 15 years' service out of the 400. There are not a very large number of the men, only those who were transferred from the late body, who could be with us all that time.

4558. Have you any details with reference to the age and periods of service of the men who have left you?—Yes, I have a very useful table upon that point which I should like to lay before the Committee, and I think it is very desirable that the Committee should have this table before them; it shows the length of service of the men leaving the brigade; it gives it year by year from 1866 and 1875; there were two men who left after having been only one week in the brigade, and 10 men left after having been only two weeks; eight left after being in the brigade three weeks; there were nine men who left after being in the brigade four weeks; 14 men who left after being in the brigade five weeks, and five men after six weeks. (*The same was handed in.*)

4559. What is the total under three months?—Over six weeks and not exceeding three months there were 38; therefore there were 86 out of 610 men who left after a service of not exceeding three months, and then over three months, and not exceeding six months, 53 more; over six months, and not exceeding a year, 107.

4560. What is the total not exceeding a year?—The total not exceeding a year is 246 out of 610.

4561. What you would represent by that is, that the cost which was put in evidence as having been laid out by the Metropolitan Board of Works upon the 600 men, was hardly a correct statement, because so many of them left at a very early stage of their employment?—It cannot possibly be a correct statement; they must have been fickle men who could not bear the irksomeness of the service. Then over one year, and not exceeding two years, there were 118 more, so that out of a total of men who left during the 10 years, 364 left after being less than two years in the service. Then I find that out of those 610 no less than 50 were dismissed. Captain Shaw, in answer to one of the honourable Members, speaks of this 610 men as being a loss to the Board of 60,000 *l.* When you come to look into the facts of the case, and see the time when these men left, such a statement is not borne out by the facts. The circumstances show something very different indeed, and I thought it was right to lay that

Return

Return before the Committee as showing that these men really leave not from any cause of the kind; many of them do not leave from anything to do with the superannuation scheme at all, but purely from fickleness.

4562. Do you take those men leaving after such short periods of service into account in the superannuation scheme which you have prepared?—I generally exercise my judgment, and thought it quite impossible to consider any relation between those short service men and the superannuation scheme.

4563. What you meant to say was that you considered that this scheme would be a ruinous scheme if none of the men retired?—Yes.

4564. You would say that these men would never be influenced by a scheme of superannuation?—But you will remember that the moment a man leaves his place is filled up by another.

4565. But the number of men who would fall upon the rates would be very much influenced by the number of men who leave after short service?—That is one of the advantages I was speaking of, that unless we had those various changes going on, and continuing all through the time, the back of the scheme would be broken entirely.

4566. But a superannuation scheme ought not to be tested entirely in the way you have tested it, that is that all the men are likely to fall upon it, but it should be tested by the number of men who remain in the brigade and become efficient, leaving out the number of men who leave in the first few weeks; and in making a calculation as to the future amount of pensions which are likely to be charged upon the funds, surely those men ought to be left out of the account?—I do not see that, because you have still 400 men in the brigade; and all I said about the tables which I referred to was this, that if there are 400 men, and they join the service at the age of 23, there would be at 60, 50 per cent. of them alive, but if you were to take it at 55 years instead of 60, over 60 out of the 100 men would be alive, and if you take it at 50 years, five years less, the tables show that about 70 out of 100 would be alive.

4567. That is calculated upon the presumption that this superannuation scheme will be in operation?—Yes.

4568. But no calculation of this sort can be a fair calculation, because you must always allow for a large number of these men leaving a few weeks after joining, and that per-centage ought to have been deducted from your calculation?—All these men would have paid something to the credit of the superannuation scheme, and could claim nothing in the way of compensation.

Monday, 19th June 1876.

MEMBERS PRESENT:

Mr. Clifton.	Sir James Hogg
Mr. Forsyth.	Lord Lindsay.
Mr. Hankey.	Mr. Onslow.
Mr. Hardcastle.	Sir Henry Peek.
Mr. John Stewart Hardy.	Mr. Ritchie.
Mr. Hayter.	

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

Mr. *Guildford Barker Richardson*, called in; and further Examined.

Mr. *G. B. Richardson.* 19 June 1876.

4569. *Chairman.*] ARE there any points which, before you leave the question of the superannuation scheme, you wish to put before the Committee with regard to your examination at the last meeting?—There are one or two questions I should like to refer to. I forgot to mention with regard to condition No. 4 of the superannuation scheme that the men suggested that that condition No. 4 should be altered so as to include those persons who had served as parish engine-keepers prior to the transfer to the Board. I think I am correct in stating that no member of our committee was aware at the time that there were any parish engine-keepers still in the service of the Board, or I think I may say that they would have been included in the scheme; I make this remark particularly because I have reasons to suppose that the fact of its not having included former parish engine-keepers has led very mainly to the scheme having been refused, seeing that there is one, certainly, of those who were employed by the parishes before he came into the service of the Board who seems to have taken a somewhat active part in inducing the members of the brigade to refuse to accept the terms of the scheme.

4570. One of those men who previous to the brigade passing into the hands of the Board had been a parish engine-keeper?—Yes, there was one particular man who was in the service of one of the metropolitan parishes.

4571. Was he one of the men who, upon Captain Shaw's recommendation, was put upon the strength of the brigade?—He was put upon the strength of the brigade by Captain Shaw's recommendation.

4572. By a report upon which I examined Captain Shaw?—Yes, he was put on at the time, and he has been in the employ of the Board ever since, but this superannuation scheme left him out, because it made no reference to the engine-keepers who were in the employ of the parish, and consequently he would have had no benefit from the scheme, except from the time that he joined the brigade.

4573. All I understand the scheme provided for upon its face was for those men who were taken over at the time the brigade was taken over by the Board, and who were subsequently placed upon the strength of the brigade, having been previously in the employment of the old establishment?—Yes; but this scheme makes no reference to these parish engine-keepers. All that it makes reference to is this: "The brigade here is to be understood as including the late London Fire Engine Establishment, and also the establishment of the Royal Society for the Protection of Life from Fire." That, of course, left out the parish men who had been previously employed, and they would have had no benefit from this scheme excepting from the time they entered the service of the Board; consequently this man felt himself not fairly treated, since he had been in the service a great deal more than nine years, and it seems to have operated with him

him to induce him to use his influence amongst his colleagues with the brigade to make them dissatisfied with this scheme, for we have reason to believe, indeed we know he signed this memorial of the men, and not only that, but some of our members, Mr. Freeman, for example, went round to the stations and made inquiry on that point, and ascertained that much influence had been brought to bear upon the men by these representations.

4574. Your statement would be, in short, that there are certain men who had been in the employment of the parishes before, and were transferred subsequently to the service of the Metropolitan Board of Works, who were left out of the original scheme, and you would place it before the Committee, that that exclusion was never intended?—I could hardly pledge myself to that, because the Board has not exactly definitely accepted the scheme. Then I would refer to another man, whose case has been referred to before, namely, the case of Smart. Some remarks have been made with regard to Smart, who was brought from my own parish to the service of the brigade. You will find it stated in the evidence that he remained in the service of the brigade for three years, or something like that, and then was attacked with a pulmonary affection, and was recommended by the medical officer to leave, receiving as compensation the sum of 10 *l.* I only refer to that, because I interested myself very much in the case of Smart at the time. He came from my district. We had known him for 17 years in Greenwich, and we considered that when he was taken over by the Board he became the Board's officer, rather than an officer of the parish of Greenwich. There was a difference of opinion between the two bodies, the Metropolitan Board of Works and our Greenwich vestry, and I remember very well applying to Captain Shaw to induce him to recommend the committee to treat his case in a more favourable way than they had done. There was a memorial sent up from our parish urging the Fire Brigade Committee to treat his case more liberally, but Captain Shaw did not second me in the matter in any way.

4575. Was the case considered by the committee at the time?—It was considered by the committee at the time, and upon the ground as stated in the printed proceedings before you, namely, that Smart was 17 years in the service of the parochial authorities at Greenwich before he was taken over by the Board, and it was thought right that the Greenwich authorities should compensate him in respect of the time he passed in their service."

4576. What year was that?—That was in the month of November 1869.

4577. Did you recommend that those years should be considered by the committee at the time?—I was not a member of the Fire Brigade Committee, and therefore I could only use my influence as a member of the Board; and I thought that if Captain Shaw had urged the committee to be more liberal, the committee would have been more liberal.

4578. Did you place your own views upon the subject before the Fire Brigade Committee?—I spoke to several members and urged his case, but it was thought that it was the duty of the Greenwich vestry to take these men under their charge; and I believe I am right in saying that there was an opinion in the body of the Greenwich vestry that it was not in their power to do so. There is some question with regard to the statute. Clause 10 says: "The vestry of any parish or place in the metropolis may allow such compensation as they think just to any engine-keeper or other person employed in the service of fire-engines who has hitherto been paid out of any rate raisable in such parish or place, and who is deprived of his employment by or in consequence of the passing of this Act, and any compensation so allowed shall be paid out of the rate out of which the salary of the officer so compensated was payable."

4579. Did you belong to the vestry?—I did belong to the vestry at that time.

4580. In your opinion, was the vestry precluded by that 10th section from compensating him?—I was rather of opinion myself that, having passed over to the Board, he ceased to be in connection with the vestry, and thereby became, not in the strict sense of the word, deprived of his employment in consequence of this Act. If he had never had any employment under the fire brigade, of course we should have been empowered to compensate him; and I think between the two authorities, while we were discussing the matter, the poor man died. At all events, he did not live very long.

Mr. *G. B. Richardson.*

19 June 1876.

4581. Sir *Henry Peek.*] But his employment was entirely continuous, was it not?—Yes, when he was transferred to the Metropolitan Board of Works, his employment was continuous.

4582. *Chairman.*] He was one of the men who passed to the Metropolitan Board of Works with the brigade?—Yes; when the brigade passed to the Board the vestry I believe ceased to have it in their power to compensate him. I only wish to show that there was a very considerable discussion which took place upon the question, and that there was no intention of leaving this man to fall through between the two stools as I may say, but he was in a very bad state of health and died during the proceedings.

4583. Mr. *Forsyth.*] Did you take a legal opinion upon the subject?—No, I do not think we did do that; it was one that would hardly be necessary in our district.

4584. *Chairman.*] Are you in a position to state to the Committee that there is any Minute of the Fire Brigade Committee, at the time of the consideration of Smart's case, which would show that Captain Shaw did not second you?—No, I have looked through the Minutes this morning; the only minute of the Fire Brigade Committee is the recommendation of Captain Shaw, that in consequence of the medical certificate that Smart and two others, who were also recommended at the same time, were in that state of health that they could no longer give any useful service to the brigade, their services be dispensed with for the future, and that the committee do recommend to the Board such compensation as they might think desirable; that is the tenor of the recommendation.

4585. There was no special recommendation?—No, I think there is never any special recommendation; it always takes that simple form.

4586. Are you in a position to say that when that recommendation came before the Fire Brigade Committee, Captain Shaw did not make any statement which would tend to confirm your opinion that the men should be dealt with more liberally?—There is nothing to show for it.

4587. You were not present upon that occasion?—No, I was not present.

4588. Have you anything to place before the Committee with regard to the money question?—The questions you put to me on Thursday last induced me also to have another return prepared, which I wish to lay before the Committee, which I think is an important one. You asked me questions with reference to how far the superannuation scheme affected others in the brigade, so I thought it would be desirable to ask the accountant to prepare an account showing the amount contributed by the first and last man in each grade, from the annuities which the men would have been entitled to under the Board scheme if it had been accepted.

4589. Does that show also the comparative annuities they would have been entitled to on their own proposal?—No, it does not do that. It only shows it under the Board scheme. The oldest, or what we may call the first of the superintendents, is Bridges, whose case I gave you before; that is to say, he would have to pay 59 *l.* 19 *s.* 7 *d.*, and would receive an annuity for the remainder of his life of 133 *l.* 6 *s.* 8 *d.* The last of the superintendents is J. E. Palmer. He has been 22 years and a quarter in the brigade. He would have to pay 34 *l.* 4 *s.* 6 *d.* to the superannuation fund, and in return for that, if he were superannuated by illness, at this moment he would receive an annuity of 93 *l.* 6 *s.* 8 *d.* for his life, or more than twice, not very far short of three times, the money the Board would have received from him.

4590. Is that supposing he is over 60 years of age?—No, that is at his present age. Then Flynn is another of those cases which I gave on the last occasion. This Table shows that he would have to pay 61 *l.* 3 *s.* 4 *d.*, and by the Board scheme he would be entitled to an annuity of 84 *l.* 18 *s.* 8 *d.* The last of the engineers upon the first class, and one who has been the shortest time in the service, but who has been in the service of the Board and the brigade previously, 16 years, would have to pay 24 *l.* 5 *s.*, and from that he would be entitled to an annuity of 44 *l.* 11 *s.* 9 *d.*, assuming him to be superannuated by reason of sickness. Then we come to the second-class engineers; the first of them is H. Williams, who has been in the brigade 16 years; he would have to pay 24 *l.* 0 *s.* 1 *d.*, and in respect of that payment he would be entitled to an annuity of

of 38 *l.* 4 *s.* 5 *d.* for the remainder of his life, of course upon the same supposition that he is superannuated by reason of sickness. Arnold is the youngest of that class; he would have to pay 21 *l.*, and he would get an annuity of 38 *l.* 4 *s.* 5 *d.* Then first-class fireman Morgan would have to pay 22 *l.* 6 *s.* 9 *d.*, and for that he would receive an annuity of 30 *l.* 6 *s.* 8 *d.*; then Harwood would have to pay 25 *l.* 1*s.* 8 *d.*, and he would receive 31 *l.* 17 *s.* 1 *d.* as annuity, always upon the same understanding that he was superannuated by reason of sickness. If those men were not superannuated by reason of sickness those annuities would be increasing year by year.

4591. As the scale increased according to the number of years' service, of course their payments would equally increase upon the other side?—Yes.

4592. Will you hand in that Table?—(*The same was handed in*).

4593. With regard to the Paper you handed in on the last occasion in which you compared the three different schemes which have been submitted, the rates of pay in that Table were calculated only upon the fireman's rate of pay, were they not?—No, they were calculated at so much per cent.

4594. But, in answer to Question 4518, you say, "Thus, for instance, after 10 years' service by the Board's scheme, the rate per cent. to which a fireman would be entitled would be 16 *l.* 13 *s.* 4 *d.*," and you go on to draw that out to the maximum at 30 years, which is 66 *l.* 13 *s* 4 *d.*?—Yes.

4595. That was calculated, not upon the rates of pay that you have now put in, which relate to the higher ranks?—It is a per-centage; it refers to all ranks alike, from the top to the bottom.

4596. You have put a Paper before the Committee, in which you put in the first column the years service of some unknown man working on from 10 years to 30, and you attach to that a rate per cent. of pay which amounts to 66 *l.* 13 *s.* 4 *d.* for the maximum; what I wish to know is, whether this new Paper is put upon the same calculation, or whether the amounts you have quoted are the actual sums, and not the per-centages, because you have stated that the men's pay would be 90 *l.* odd in one case, and 100 *l.* odd in another?—These are the precise sums in this Table, not the per-centages at all; the two Tables both agree, in fact, except that the one is per-centage, and the other is what he would absolutely receive and absolutely pay.

4597. Mr. *Hardcastle.*] He would receive a maximum per-centage of 66 *l.* 13 *s.* 4 *d.* upon his pay at the time he retired, whatever his rank?—Yes, that would be the per-centage.

4598. *Chairman.*] And in the Table you have now handed in you give, not the per-centages, but the gross sums which the men would be entitled to?—Yes. Now the next point with regard to this superannuation scheme, is to ask the attention of the Committee as to the further details with respect to men who have left the service of the brigade after previous service in the old establishment. I do not think that the Committee has as yet had it before them that there were many of the brigade who left the service of the brigade very much in the higher ranks, and it is desirable I think that the attention of the Committee should be drawn to this point. For instance, in the first year after the Board had the charge of the brigade, we find that Swanton, who was at the time foreman as it was then called (now it is superintendent), left the service of the brigade upon the 2nd of February; and there is Withers, an engineer; Cricket, a sub-engineer; Charles Bellamy, another sub-engineer; Hodges, a first-class fireman; Brown, a sub-engineer, all of whom left the service. I refer to those men as examples, and you will find several of them as we proceed; we have no official knowledge of what became of those men, but I think I am not wrong in saying that from what we found at the time, and what has arisen since, many of those men left the service of the brigade to join the salvage corps. The salvage corps was formed very largely indeed out of the fire brigade, and I believe the fire brigade is at this hour a feeder to the salvage corps.

4599. Those are men who have left the service subsequent to the return you have put in showing those who have left the brigade up to two years' service, the total being 364. And the reason, I suppose, why you wish to supplement that by your present statement, is to show that a certain number of men whom you have quoted left very soon after that two years' service; is that so?—No;

Mr. *G. B. Richardson.*

19 June 1876.

very soon after the brigade came into the charge of the Metropolitan Board of Works, leaving that service to go into other and higher services.

4600. What service had they had when they left the brigade?—Swanton was at the head of the brigade; he was equivalent to our superintendent.

4601. He brought with him certain years' service which were counted from the other force?—I do not know his time of service, but he was probably one of the oldest officers of the brigade.

4602. What this Return was put in for, as I understand it, was to show that the men were enticed away from the brigade before they had cost the brigade the amount of money which it was represented those 610 men had cost in training and in other ways; you wished to show that those men left before they could have cost the brigade, practically, anything?—That Return I handed in last week shows to the Committee how very many of the 610 men left the service of the brigade before they could have been of any real value and service to the brigade. Now, I offer some evidence to show the Committee that there were many men who left the services of the brigade who were very valuable men to the brigade, and who were at the top of the scheme; and that they left, many of them, for one purpose and another, for their own advantage; amongst other purposes, many of them went to the salvage corps; many of them have gone to foreign employ; one is at Birmingham; we found one at Manchester at the head of that brigade; some of them have gone to the Colonies in charge of the fire stations, and matters of that kind; therefore they have gone, not because they were dissatisfied, as the evidence of Captain Shaw rather tended to represent to the Committee, but because they had got better employment elsewhere.

4603–4. But does not that open the question that is before us now; you say the men were not dissatisfied, but then they had no superannuation scheme?—They had no superannuation scheme, certainly.

4605. Supposing they had had this superannuation scheme, which the men state would have induced them to have remained in the service, those men might not have left you for the temptations which, without a superannuation scheme, other services have held out to them?—I should think that if the salvage corps offered them a few shillings in addition per week to the amount which they received from us, because they knew that their services would be very valuable to them, it is very doubtful whether any superannuation scheme of the Board would have kept them there.

4606. That is purely a matter of opinion?—It is purely a matter of opinion. I do not know who is in charge of the salvage corps, but I fancy it is one of our own late men.

4607. Mr. Swanton?—I fancy it must be Mr. Swanton. There are a great many men in the higher ranks who left who all went to the salvage corps, and it is a point for the Committee to remember that they are at every fire, and can undertake the duties of firemen just as well as our brigade. Their object is, of course, to prevent property from being destroyed.

4608. Although Captain Shaw is probably aware of the valuable services which they render him, yet he states that he is under-handed?—Yes. I am not speaking with regard to that, but to show that these men left not because they were dissatisfied, but because they found better employment elsewhere.

4609. That is to say that, in your opinion, a superannuation scheme would not have induced them to remain?—I do not think it would have done so at all. Then my next matter is to place before the Committee a Table which I have prepared, namely, a document from Watling-street, showing the sums of money which those men who have left the brigade in the years 1873, 1874, and 1875, took with them out of the savings fund. In 1873 the amount of money which was taken out of the savings fund by the men who left was 275 *l.* 10 *s.* 1 *d.*; in 1874, 300 *l.* 9 *s.* 3 *d.*; and in 1875, 574 *l.* 12 *s.* 6 *d.*; and the highest money which was taken by one man in this time was 63 *l.* 19 *s.* 11 *d.*

4610. That would bear a proportion to the number of men leaving, and their contributions at the time they left?—Yes, it has been a feeling in my own mind, and I think with some of my colleagues, that it was doubtful whether this power in the hands of every man to take the savings which he had accumulated in the savings fund did not form a great inducement to a man to leave the service of the Board and take the money to which he was entitled and spend it.

4611. Supposing

4611. Supposing a man to have declined to contribute any of his savings to your fund, and to have placed the money in a savings bank, he would have been entitled to have taken it at any time and spent it?—Yes, of course.

4612. Therefore the inducement would have been the same there?—Yes, no doubt in that view.

4613. That is rather against your statement that the practice of saving on the part of the men should be discouraged, because when they were in funds they would leave you?—I think it is in favour of the superannuation scheme as against the savings fund. I doubt if the savings fund is a desirable scheme.

4614. I understand you to be clearly favourable to a superannuation scheme, giving a pension after a certain period of years, but which does not allow the men to withdraw their contributions until they have arrived at the first period when they are entitled to pensions?—Yes, but I am not in favour of an inalienable pension, as I stated the other day.

4615. You still retain to the opinion which you stated the other day, that the mercy of the Board, and the known generosity of the Board, should be exercised in every case?—Yes. The other point which I wished to raise was upon that argument which I wished to use against the inalienable pension, namely, that after a certain number of years an inalienable pension would be a direct premium upon the men to leave the service of the brigade and enter service elsewhere, and so get, not only the pension, but so much additional for their new employment, and in that way it would operate directly opposite to what Captain Shaw, as it seems to me, contemplates.

4616. Mr. *Forsyth.*] You would rather say an inalienable right to a pension?—Quite so; it means inalienable by the Board for misconduct.

4617. *Chairman.*] How would you sum up your own proposal?—I submit that it comes to this, that the Board scheme is clearly proved to be most liberal and most advantageous to the men, and that it was unreasonable to suppose upon the part of the Board that there could be any hesitation with reference to the men accepting it.

4618. But you would say that the men when they did refuse the superannuation scheme were not in a position to understand it properly?—Yes, I say the refusal of it by the men was an indiscretion on their part attributable solely to their being ignorant of its advantages, and not allowing themselves sufficient time to ascertain how liberal its provisions were.

4619. This is not the first time, is it, that the question of superannuation has been considered by the Board?—No; all I would add upon that matter is that the Board has intelligently devoted itself for months past to this subject; before there was any idea of the appointment of this Committee, and that they were not influenced in any way by the appointment of this Committee in dealing with the superannuation scheme.

4620. You will not allow what I put to you the other day, that the rapidity with which the Board considered its scheme was in strong contrast with the rapidity with which they had considered the former scheme, and that this Committee was sitting during the consideration of your scheme by your Board?—No, I would say that the matter was simply delayed, owing to the illness of two members of the Board, and that if it had not been for that it would have been disposed of months before. Then, again, I say as a summary of my evidence, that it was erroneous to attribute the leaving of the men so entirely to the want of a superannuation scheme, as has been done. I think the tables which we have put in sufficiently show that, and clearly show that, and in support of that I would ask the Committee to let me read this letter of the brigade men immediately after we increased their salaries. This letter is dated 2nd December 1872; it is addressed to Colonel Hogg; "Sir, We are deputed by the officers and men of all ranks in the Metropolitan Fire Brigade to ask you to accept their most sincere thanks for the favourable manner in which their question of increase of pay has been settled, and we would most respectfully ask you to convey to the members of your honourable Board that they are exceedingly grateful for their kindness, and that it will be their earnest endeavour to merit a continuance of that confidence which has hitherto been placed in them."

4621. That is after the rate of wages had been increased?—Yes.

4622. That is a very natural expression upon the part of the men?—Quite so;

Mr. *G. B. Richardson.* 19 June 1876.

but I think it is a very unnatural conclusion that from 1866 to 1872 these men have been dissatisfied, and leaving the brigade in numbers because there was no superannuation scheme. I think if such a feeling had been existing amongst the brigade they could not have penned such a letter as that. It was in 1866 that they joined the brigade, and this letter was written in 1872. I only contrast the two things.

4623. But that letter, referring as it does to the increase of pay, only shows that the grievance of not having sufficient pay had been met, and met properly by the Board; but it does not show that long before that they had not been still anxious to get a superannuation scheme as a provision for the future?—Only that we had heard nothing about a superannuation scheme up to that time.

4624-5. Are you aware that the men's representations and Captain Shaw's representations, with regard to superannuation, date before 1872?—I have not the dates before me when they first began to make representations, but their memorial was in 1874.

4626. Was the men's statement to the effect that when the brigade was transferred to the service of the Metropolitan Board it was the only subject upon which there was any anxiety, and that at that time they made a representation with regard to their future pensions to the Board?—I am not a member of the Fire Brigade Committee, and have not been, excepting for one year, so that I could not charge my memory with facts of that kind, but my impression was that we, as a Board, had heard nothing of the superannuation question prior to 1872.

4627. I may infer from that answer that the earliest notice which you think was given to the Board of this matter was at the time when the treatment of Charles Radford by the Board brought to the men's mind the question of the desirability of a superannuation fund?—Yes, it may have been that. Then, summing up my evidence, further I would say that, of the 610 men who have ceased to be in the service, some few have died; 50 of them have been dismissed; and some, I cannot say how many, left before they had been in the brigade six months. Another large number left the service before the expiration of 12 months, and that those in the higher branches have mostly gone to the salvage corps. That is really the summing up of my evidence on this question, which I thought it was only fair to put in that short, terse, manner before the Committee, because I felt that they were important points, which have, I think, been fairly met by Mr. Freeman and myself. Now I am prepared to proceed with the next matter.

4628. What you have just stated would, I think, hardly affect the question which was put to Captain Shaw, and has been under discussion, because, although a certain per-centage of the force leave after a very short period of service, in consequence of finding the service for various reasons unsuitable to them, that does not prevent other men leaving for want of a superannuation scheme?—I said that all did not leave on that ground.

4629. It does not alter the fact that was stated by Captain Shaw, that the number of men who leave throughout the force, in consequence of not being satisfied on this point, is so great that he cannot get sufficient applications to fill those places?—That, I submit to the Committee, is a matter of opinion. I submit that the evidence we produce does not support the evidence of Captain Shaw. I think I am justified in saying as much as that.

4630. Then, leaving that part of the subject, on the question of the fire which took place at Woolwich, you wish, I believe, to give some evidence?—Some questions were put, I think, by the honourable Member for the Tower Hamlets, to a man of the name of Port.

4631. At Question 2038 he was being examined about the station being shut up at a time when the engine was taken out; he was asked, "Do you know as a fact that that occurs often in your district?" to which he replied, "It occurred the day before yesterday at Woolwich. *Q.* How many men have you at Woolwich? *A.* Four. *Q.* And you have an escape, I suppose? *A.* We have one escape. *Q.* And one man on station duty? *A.* Yes. *Q.* That leaves two for the engine? *A.* Yes, it does. *Q.* Can you ever send out an engine with more than two men at night? *A.* Not from Woolwich. *Q.* How was it that you closed the station; were there two fires at once? *A.* It happened that the officer

officer was away on business, and one of the men was called for at the superintendent's station. A fire happened while the men were away, and that left the two men to ride with the engine. *Q.* How far are you from any assistance at Woolwich? *A.* Blackheath, I think, would be the nearest station. *Q.* How far is that? *A.* I cannot tell you exactly. *Q.* Is it three miles? *A.* It is about three miles"?—I personally reside at Blackheath, therefore I am, of course, very well acquainted with all this district. Port did not state to the Committee, as I think he ought to have done, that the fire was outside the metropolitan area. It was not a fire which, if there was any risk to the metropolitan area by attending, it was his duty to attend. Then the inference arose from the questions that were put, that there was, possibly, some risk to the district from that office having been shut up for 38 minutes without any person being present, and the evidence that I have to offer relates mainly to that particular fact, because, knowing my district, and knowing that there are very few fires in our district, I thought it was desirable to work it out, and ascertain what really was the probable risk that was likely to be incurred by any one of our stations being closed for a few minutes at a time.

4632. Will you give us the result?—Yes, I would describe the district first. The district I deal with is what is called the Greenwich district, including the parishes of Greenwich, Deptford, Charlton, Plumstead, Woolwich, Eltham, Lee, Kidbrook, and Lewisham, with Penge. It includes an area of nearly one-third of the whole metropolis, or rather to give it exactly, 3·5 of the whole metropolis. Its acreage is 21,581, whilst the acreage of the whole metropolis is 75,620. In that district there are six stations and 29 men, and the stations of the whole metropolis are 48, therefore one-eighth of the whole metropolitan stations are in this area and its proportion to the whole number of men in the brigade is 13·50. Then the population of the district is 224,953, and the population of the whole metropolis, taking the last tables, is 3,265,541, and the ratio is there again 14·5. If you take the inhabited houses as a point of basis to calculate it upon, there were 35,237 inhabited houses in this district; the number of inhabited houses in the whole metropolis is 419,374, the ratio of this district being 11·05. If you take the assessment valuation of this district for last year, it is 1,219,695 *l.*, while the valuation of the whole metropolis was 21,292,553 *l.*, the ratio of this district to the metropolis being 17·45.

4633. I suppose you quote those figures to show that for a surburban district you are as well supplied as other districts with appliances for extinguishing fire?—Partially, and also for what follows. In the district for which I took that out, from the 1st January to the 15th May, there were of officially reported fires only 32 fires, and out of those 32 fires or calls to fires, there were only four houses on fire at all, that is to say, there were only four houses out of 35,237 which during a period of four months and a half were on fire.

4634. I suppose the accident of a fire is not absolutely reduced to a certainty?—No, but any fire brigade must necessarily deal with probabilities.

4635. What I wished to show related to the examination which took place upon this matter before. We had a station pointed out to us which was absolutely shut up for a considerable time, and you were going to show that there was no risk incurred in that?—I was going to show that there was very little risk incurred in that.

4636. Do you recollect that the evidence went to show that telegraphing from Woolwich to the nearest station would take a considerable time, and that if a fire had broken out there, there would have been a difficulty in meeting it?—I have no doubt about it. The nearest telegraph station to Woolwich is Blackheath, and going from one to the other would occupy 20 minutes, going as fast as they could.

4637. Mr. *Onslow.*] What class of buildings is comprised in that area?—Buildings of all kinds, from the very poor to the very highest.

4638. Mr. *Hardcastle.*] When you say a house you mean an inhabited house, I presume; do you refer also to shops and warehouses?—A shop would be an inhabited house.

4639. Mr. *Onslow.*] Would there be any wharves?—Yes, near the river. I can give you the particulars with reference to the fires in the district.

Mr. *G. B. Richardson.*

19 June 1876.

4640. *Chairman.*] Do those figures bear very materially on this question we have before us?—I only wish to show that there have been so few fires in Woolwich. I think there have been only four up to the present time.

4641. Now, with regard to the overwork of the men; is there anything that you wish to state to the Committee as to that matter?—The only places upon that question I would refer to are two stations within my own district; those are the Blackheath and Lewisham Stations. I visited both of those a few days back for the purpose of ascertaining what was the amount of work or labour that those men were engaged upon, and practically speaking I found, with regard to Blackheath, that they had had six calls to a fire since the 1st of January, and that at Lewisham they had had only two since the 1st of January; and it was at Lewisham that it was stated that one man was five days without being able to take off his clothes. I made some inquiry about that matter, and I heard that it arose from one man having been ill at the Deptford station, and another having been sent away for some purpose. I believe he was suspended from duty, and the consequence of it was that they took this man from Lewisham, and he did the escape duty at Deptford, and then he came and did the escape duty at Lewisham, and then he did the day duty as well, and so it was that although he was sleeping during the night on escape duty, yet he did not take his clothes off for five days. But I asked this question with regard to the escape duty at Lewisham, whether they had ever had any call during the time of escape duty since the 1st January, and the answer was, No, they had not; and I asked the questions of them also which seem to have been asked by Mr. Freeman, who gave similar evidence with regard to other stations, and they seemed to concur in the view he expressed, that if these men had asked for more leave they could have obtained it. I can give the exact amount of leave they did have. For instance, at the Blackheath station in the month of May, the officer in command told me that he gave 64 hours' leave; that is to say, the chief had had three hours' leave during the month. Bates, another one, had nine hours, Ashford had 32 hours, and Roberts, the junior, had 20 hours, in all 64 hours, and when you work that out, that is equal to four hours each man for one day in each week. Then for the next month they had 93 hours of leave amongst them; that is equal to six hours each man one day each week. At Lewisham they had 64 hours' leave granted in January, 34 hours granted in February, 33 hours in March, and 43 hours in April.

4642. How many men are there?—Four men; in answer to the question, Could they have had more leave? Yes, the officer said, only they did not ask for it.

4643. Was that taken upon a day of 24 hours, or merely upon a day of 12 hours?—It was so much leave granted during the whole month.

4644. That is the whole 24 hours of each day?—Yes; practically it amounts to this, that each man had four hours each week given to him of leave, when he could leave the station and go where he liked.

4645. Mr. *Onslow.*] Four hours out of the 168, seven days included?—I have no hesitation in saying that this particular part of the system requires remedying; I think it is very hard for those men to be kept at the station, although they are doing nothing, and not to be allowed to leave; they are fined half-a-crown if they go outside the walls of the building; take the Blackheath station; the man there sees his neighbours go out for a game of cricket upon the heath, and other things, when he cannot leave.

4646. *Chairman.*] I understand you are in favour of allowing a state of things which would give the men certain leave?—I should say that one man more ought to be added to every station so as to allow those men more liberty; it is very hard if a man can never go with his wife shopping or catering for their household, or what not.

4647. Do you think one man additional would be sufficient, because Captain Shaw's evidence was that two would be required?—I think that one would be sufficient for the purpose, because the men do get four hours per week, that is to say, a man gets a portion of a half holiday, and if you were to give them an additional man to each station they would have, of course, so much more time allowed them.

4648. At the same time you are prepared to say, that with that object you would

would recommend an addition to the brigade?—Decidedly; and I may say that I never did realise how much the men were tied down to their place, when doing nothing, but unable to leave, until I was induced to make some inquiries into this question, and I have no doubt whatever that this inquiry will result in their being benefited to that extent, because the worst of it is that they are not allowed to leave the place even when they are off duty. I am not a member of the Fire Brigade Committee, and that must be my excuse for not having examined this question before.

4649. The examination has also turned upon the comparison of the police force with the fire brigade with regard to superannuation. Have you anything to represent to the Committee on that point?—It appears to me that the evidence that was given by Captain Shaw, comparing the relative positions of the one force to the other, was hardly that which they would properly bear. He compared a superintendent in the brigade to a superintendent of a division in the police. I do not think that can be borne out by the facts of the case. I should have put a superintendent in comparison with a chief ordinary inspector, a first class engineer with a first-class inspector, a second-class engineer with a second-class inspector, a first-class fireman with a first-class ordinary serjeant; all those are officers in the brigade, and all those are officers in the police. Then, taking the men, a second-class fireman might be compared with a first-class ordinary constable, a third-class fireman with a second-class ordinary constable, and a fourth-class fireman with an ordinary constable. It is purely a question of opinion, but taking the two scales upon the views that I have expressed, they certainly seem to show that the Board's view is liberal.

4650. After all, a question of comparison must be purely a matter of opinion, judging by the nature of the duties they have to perform?—Yes, one person is quite as able to judge of that as another.

4651. As I understand, the men do not complain of the pay they are receiving at the present moment?—No.

4652. Therefore it should be upon the pay that they are receiving at the present time, with which they are satisfied, that their superannuation ought to be based, rather than upon a comparison with other services?—Quite so.

4653. Do you wish to submit to the Committee any opinion with regard to the question of taxation relating to the maintenance of the brigade?—I assume that the result of this inquiry would be a necessarily increased taxation beyond the halfpenny fire-brigade rate. Of course we are limited to that at the present moment.

4654. Are you of the same opinion as Mr. Freeman, that it would be desirable to extend the limit?—You could not give the other 50 men, which I was suggesting just now, without you increased the rate. It would cost us more than we have funds to spend.

4655. Do you know, with regard to the present year, that your balances are not sufficient to enable you to add to the force?—I think the accountant will explain to you that there is not sufficient to cover the expenses of last year.

4656. Would you raise the balance of taxation in that way?—It is an interesting question to consider what is the character of the cost of the fire brigade. I would submit that it is something added to the cost of the insurance of property against fire. At the present moment, when we look back to see what Parliament did before, we see that that is borne out by the fact that Parliament put one portion of the expense on the fire insurance companies, and one portion on the rates. The proportion which was put upon the insurance companies there is no doubt was put upon them for the purpose of reaching that property which was really and truly that which is benefitted by the fire brigade, that is to say, insurable property. When you put it upon the fire insurance offices, you give them an opportunity of increasing their insurance rates, and you make the insurable property bear that portion of the cost of the fire brigade. Then again, there is a large quantity of the property within the metropolis which is not insured, and for the protection of that the rates are called upon to pay. You could not reach it in any other way, but when you speak of charging the whole of the fire brigade, or any large increase of the fire brigade, upon the rates, some of which are charged upon land, with arable crops upon it, it does seem absurd that hun-

Mr. *G. B. Richardson.*

19 June 1876.

dreds of acres in the metropolis should contribute towards the support of the fire brigade, which cannot benefit by it in any way.

4657. Then do I understand you to represent that if the halfpenny rate is increased, so that the contribution of the metropolitan ratepayers should be increased, a proportion of the increase should take place from other sources?—I think that a proportion of the increase should take place in the amount of money which is to be contributed by the fire insurance offices.

4658. With regard to the amount of money contributed by the fire insurance companies, I understood from Mr. Freeman that, as far as he knew, that only extended to the metropolis; that in other places there were no contributions from the insurance companies?—But our committee had some evidence before them to show that that is not quite correct, because when we went to Manchester and Liverpool we ascertained there, and we have the fact in this report of the committee that went down, that both at Manchester and at Liverpool contributions are made by the insurance companies to the brigade.

4659. Are you aware that those contributions are made under a special local Act, which established their fire brigades?—I do not know that. I only know that we had the balance sheet of Manchester, and upon the credit side is "Contributions from insurance offices, charge for expenses at fires, and other casual receipts." It is put down all in one sum, 3,147 *l.* 9 *s.* 8 *d.* as against the other side, which shows a cost of 6,000 *l.*

4660. You were in this room when I examined Mr. Freeman, were you not?—Yes.

4661. You heard me quote a case which was decided by the Lord Chief Baron Kelly and two other members of the Bench, as to the Drighlington Local Board *v.* Bower, which was an attempt to obtain a contribution from an insurance company to the local board for extinguishing a fire, the Lord Chief Baron saying: "I am of opinion that the rule to enter the verdict for the defendants in this case must be made absolute;" and Mr. Baron Bramwell saying: "I think it about as plain a case as ever was," and considering that the local board had a duty to perform towards the public, and that common property should be applied in extinguishing fires. Mr. Baron Piggott also stated: "I also think it a very clear case," and that inasmuch as no provision was made in the Acts for remuneration to be made for the extinction of fires within the districts of local boards, simply because it is to be done at the joint expense of the ratepayers for the benefit of all, the board had no power to charge. Mr. Baron Pollock said: "I agree that this action is not maintainable. It is admitted there is no express contract, and for us to say there is an implied one would be contrary to the provisions of the Act and to principle"?—That was assuming that the claim was made without their consent; a compulsory claim.

4662. That is a case in which there was no agrement between the parties that the insurance companies should contribute; I asked Mr. Freeman, and I ask you again, do you know any case in which a local authority has been able to compel a fire insurance company to contribute, unless the fire insurance company contributed under some special Act, such as is the case in London?—No, I do not know that. I was referring to contributions which have, in both those cases of Manchester and Liverpool, been freely given. In Liverpool, the Report states: "The fire department at Liverpool receive from the salvage committee in London 650 *l.*"

4663. The fire brigade in Liverpool is a branch of the police, as I understand?—It is hardly to be called a branch of the police, but it is under the same officers as the police.

4664. Does not the fact that this judgment seems to imply that the local authorities, unless there is a special agreement between the parties, have no power to compel a charge go against the principle that fire insurance companies should contribute?—I do not know that, because there has been no power given them. We have the fact before us that Parliament has required insurance offices in the metropolis, in respect of all property insured by them in the metropolis, to contribute to the cost of the fire brigade.

4665. Might we not infer that that arose, as I suggested the other day, rather from the fact that fire insurance offices being in possession of the previously existing fire brigade, it was thought that they would not object to contribute to them on their transfer to the Metropolitan Board of Works?—No; I should

should put it upon this ground, which I think is the more reasonable point of view, that there is a certain immense mass of property, 560 odd millions, in the metropolis, which is to benefit by the fire brigade; how can you reach it? You can reach it in no other way than by making the insurance offices contribute towards the cost of it; if you call upon them for contributions, they can add it to their fire premiums, and so recoup themselves from the very property which pays the cost of the fire brigade.

4666. Mr. *Hankey.*] How can they recoup themselves if the property is not insured?—I was speaking only in respect of property that was insured. I say there is a large quantity of property that is not insured, and the proportion on that the rates will have to bear.

4667. You make a distinction between property insured and uninsured?—Clearly, the insurance offices pay 18,905 *l.* for the year 1876.

4668. *Chairman.*] They pay a fixed contribution of 35 *l.* per million?—But it comes to that; the ratepayers pay 48,359 *l.*, but a large proportion of that 48,000 *l.* must be considered as being for the protection of life from fire.

4669. It seems to me that where the law is distinctly declared that the general ratepayer was bound to take all charges for this purpose, the charge could not fall properly upon the insurance companies; property is quite as valuable in many towns throughout the kingdom in places where insurance companies are not charged as it is in London?—But is not that attaching too much importance to that judgment; that judgment you have quoted only goes to say that unless there is a statutory requirement calling upon the fire insurance offices to pay a contribution you cannot get that contribution from them.

4670. But we are guided generally in this country by the judges and the law?—But I am forming my opinion again upon the statutory requirements, and I say there is statutory requirement to that effect in the metropolis, and I say if you are to raise the taxation of London let a proportion of the increased rate be derived from the insurance offices.

4671. You represent it as your opinion that notwithstanding the fact that it has been decided in country places in the other way, you think that in any re-distribution of the amount of income the insurance companies ought to bear their proportionate share of any increase?—Certainly, I do think so.

4672 Now, with regard to the water supply of the metropolis, a question which has been often before us is that of hydrants; what have you to say upon that subject?—That question has come before me, as this matter has been referred to the Works and General Purposes Committee, and I have had on several occasions to deal with it. The Works and General Purposes Committee presented a very valuable report to the Board upon that question upon the 21st of February 1876. That is printed in Appendix No, 9, page 3.

4673. That is the report in which there is quoted Sir Joseph Bazalgette's authority, distinctly giving it as his opinion "that hydrants for the purpose of extinguishing fires would not be of real practical advantage to the Board, unless a sufficient pressure of water were insured, and that this cannot be the case so long as the management of the water supply is under the independent control of the different companies?—That is so. I am quite prepared, in any evidence I give, to support that view. I am very strongly convinced that no practical result can ever attach to the improvement of the fire brigade of the metropolis, so far as the water is concerned, unless the entire charge of the water supply is placed in the central authority.

4674. I think you took that report up?—I did; and I should have liked to read what I said upon that occasion, but that it is rather long.

4675. You however, I gather, fully endorse that report?—Very fully, indeed.

4676. I should like to know upon what ground that opinion was based. Was it upon the ground that hydrants placed upon mains under constant pressure could not be available unless you get a head of water such as they have at Manchester, to make hydrants useful without the intervention of engines?—That was what it was based upon, that unless we had a very considerable pressure, and also a pressure which must be permanent in its character, which is the more important point, no use can result to the fire brigade of the metropolis, except it may be upon the mere question of getting water, perhaps a little sooner than

Mr. *G. B. Richardson.*

19 June 1876.

than otherwise; but even then I do not think we can justify the large expenditure which would be necessary. I hold in my hand a report which bears the signature of Sir James Hogg and myself, and bears date the 12th of October 1874. We, the chairman and deputy chairman of the committee, were instructed to report to the Works and General Committee upon the subject of hydrants for extinguishing fires. We had Captain Shaw before us and examined him very closely, and I think there are some paragraphs of that report which it would be desirable to read.

4677. Are you aware that Captain Shaw has expressed opinions in favour of hydrants before this Committee?—So I understand. No one can be more in favour of them than I am.

4678. What is the definition of a "stand-post"?—It is one of those things which are attached to a main, rising from the ground.

4679. They are now used for filling the water carts?—Yes, something of that kind. I have a report from Captain Shaw, in which he recommends that the lamp-posts should be stand-posts; that is to say, that several lamp-posts should be connected with the main.

4680. I gather from the report you have read that Captain Shaw distinctly endorsed the view which the Metropolitan Board of Works seemed to take in all their communications with the water companies, that it would be useless to apply hydrants, unless they could get such a pressure as would enable them to dispense with engines?—Not only that; he goes further, and he says that, as regards the respective values of plugs and hydrants, merely for the purpose of getting water, you can get your water for the engines as quickly from the plugs as you can from the hydrants.

4681. Mr. *Hardy.*] That, of course, depends upon whether there is any water in the main to which the plug is attached?—But the report is based upon the assumption that there is a constant supply.

4682. Are you aware that if there is a constant supply you cannot keep the plugs in the main at all?—I should say it simply depended upon the amount of pressure that there is in the main.

4683. *Chairman.*] It has been stated before this Committee, and before various other Committees upon former occasions, that where mains were constantly charged it was impossible to place plugs upon them, and that no such plugs are placed upon fully charged mains?—There is that difficulty in placing plugs upon the mains, but these are all service pipes.

4684. Mr. *Hardy.*] But as soon as you have a constant service upon the mains, those service pipes become practically mains, do they not?—I think I am correct in saying that the plugs in this part of the metropolis, where there is constant supply, have not in many cases been removed. I have a letter from the East London Waterworks, dated the 17th December 1872, in which they say: "But since all the powers of those local bodies and officers were, by the above Act, carried over to, and concentrated in, the Metropolitan Board of Works, and with them, as the directors submit, the duty of exercising them, the directors of this company have certainly felt it hard that their proprietors should still be left to bear a considerable annual expense in maintaining a system of fire-plugs, &c., which appears to satisfy no one; for which, instead of receiving any thanks or re-payment, the company is blamed;" and they go on to show this, that the great objection on the part of water companies to fire-plugs has been that they engender a very large amount of waste, and that they suffer very considerably thereby. Then here is a letter of Mr. Phipps, of the Lambeth Waterworks, bearing date 21st January 1875. This is upon a letter written by the Board, requesting to know when they would be prepared to give a constant supply in each district. He says: "With reference to the present intermittent service, it would be impossible to define precisely the times at which, in certain districts, the services would be charged and when not, as this must vary with the state of supply, the season of the year, and other contingencies liable to occur from day to day. I am directed, also, to remind the committee that, if the district services, on the occurrence of a fire, were already turned on, it would probably be necessary to turn some of them off, so as to concentrate the water on the fire; and it will thus be seen that the matter is too complicated, and depends

depends upon too many chance circumstances to be much improved, excepting by the introduction of a constant supply of water." That is to say, assuming you have a constant supply over the respective districts, and then that you want a quantity of water in one particular spot for a fire, that letter conveys to you the impression, not that it would be necessary to go round to turn on, but to turn off.

4685. *Chairman.*] I thought that it was upon the intermittent supply; that it would be necessary in order to concentrate the supply into the pipes from which you wished to draw your supply of water, to turn off the supply from other pipes?—You may take it either way.

4686. Take it that way. I understand that the fire brigade in case of fire, would require to concentrate the water to one particular point, but if a constant supply is given that will not be necessary?—Assume that a constant supply is given over a whole district by one company, and that when you have a fire in one particular spot you want a greater pressure brought to bear upon that particular spot; instead of telling your turncocks as now to go and turn the water on, you would then be obliged to send the turncocks to turn the water off in other places so as to increase the pressure.

4687. You cannot argue that from the letter which you have read, because the letter was written upon a different assumption. It was written upon a letter from the Metropolitan Board of Works, which, shelving the question of constant supply, asked the companies if they could meet the difficulty by this alternative mode. I do not think you can quote that letter, and the inference which might be drawn from it as applying to the constant supply?—These words seem to me to convey it.

4688. It says, "with reference to the present intermittent service"?—The pressure is likely to be greater with an intermittent supply than with a constant supply, because it is operating over a smaller surface; if spread over a larger space the pressure would be so much lessened.

4689. That is supposing that your pressure in a constant supply is so weak that it will not meet your demand for water?—I think I may put it in this way, that with a standard of pressure of 50 lbs. to the inch in a small district, extended over three times the district, the pressure instead of being 50 lbs. would probably be 40 lbs. or 30 lbs.

4690. You are aware that there are districts under a constant supply with this, as you say, insufficient pressure at this present moment where the use of engines is dispensed with in putting out fires; I will take even your own district?—We have a few in our own district, but our own district is peculiarly situated; the pressure there is not given by pumping power as in others; it is given by gravitation.

4691. But the gravitation produces a pressure not very much in excess of what you were speaking about just now?—The general pressure by gravitation in our district I think reaches 50 to 60 lbs. I think some of the other places go up as high as 60 lbs., but our district is very favourably situated for the use of hydrants, owing to the fact of there being a table land above the level of the Thames, and then the ground rising so much, and the company having placed reservoirs, one for instance in Greenwich Park, and another at the top of Shooter's Hill, so that we have a great advantage in that way over other districts. In both Greenwich and Woolwich the parishes have laid down a certain number of hydrants which would be capable of being used, but that would not be the case in other parts of the metropolis.

4692. But it being the case as you have stated, that the district with which you are connected is supplied by the Kent Water Company, and that you have a system of mains constantly charged, upon which there are a certain number of hydrants fixed, and that those hydrants are found to be effective for the purpose of extinguishing fires without the assistance of engines. Why have the Metropolitan Board of Works never placed hydrants upon the whole of the mains of the Kent Waterworks district?—Because they have not all the same pressure. It is given in other places by pumping power, and not by gravitation. I stated that we were peculiarly favourably situated for it.

4693. You would say that a small part of the Kent Waterworks Company which applies to the district of Deptford, Greenwich, and Woolwich, is the only

Mr. *G. B. Richardson.*

19 June 1876.

only part of the Kent Water Company's district where a pressure is maintained sufficient to enable you to use the hydrants in the way you would wish?—I should not like to answer the question so definitely as that, but I doubt if there are any parts of the metropolis where they have any great pressure by gravitation; their pressure is always produced by pumping, and then it is very uncertain indeed. I think we have had it before us, from statements which we have had from time to time of the results of fires, that if a large quantity of water has been used in extinguishing a fire, the supply of water has ceased to be even sufficient for the engines, and it seems that messages have been obliged to be sent off to the head-quarters of the water company calling upon them to put on more water.

4694. Are you aware that the Kent Water Company state that the pressure in their district generally at night would be about equal to the difference between the level of the commanding reservoir and the level of the premises on fire, and that their levels are what I stated, giving you a 50-lbs. pressure at the houses?—Yes, I have heard that.

4695. Is that a statement which applies to the whole of that district?—I do not think that that applies to the whole district generally; but I would make this remark, that when we went down to Manchester the other day we found the pressure in the mains in the centre of the town, in the middle of the day, was about 55 lbs., but the head of the fire brigade in Manchester told us that in the night-time that pressure instead of being 50 lbs. is over 100 lbs., because the water which is being drawn out of the different pipes during the day ceases to be used; all the pipes are closed, and the people are in bed, and the moment that the supply of water to the cistern ceases, up goes the pressure. We go to our own district because we have tested the pressure in our Kent water district between night and day, and we found that it was the same by night as by day, showing that at head-quarters somehow or other they had reduced the pressure, because otherwise the pressure must have been very largely increased at night when no water was being drawn out of the pipes.

4696. Are you speaking of the time when you made experiments with hydrants in 1874?—No; I am speaking of Sir Joseph Bazalgette's Return; after that Return was made we suggested to Sir Joseph Bazalgette that he should make some return of the pressure at night-time.

4697. Were you present on the 7th of August 1874, when a number of members of the Metropolitan Board of Works went with Captain Shaw to test the hydrants which had been put upon the Kent Water Company's district?—I was present.

4698. You saw the experiments?—I saw the experiments.

4699. You are aware that the pressure was found to be about 50 lbs., equal to about 110 feet, and that water was thrown from the hose over 60 feet in height?—I should say so.

4700. Which pressure would be available and useful for extinguishing fires?—For one single jet probably, but if you were to put on two or three it would not be of the slightest use; you could not rely upon one single jet to put out a fire. At Manchester we saw six put on one single main at the same time.

4701. Is Rotherhithe supplied by the Kent Water Company?—A very small portion of it; just before you approach the Surrey Commercial Docks; then the Southwark Company comes in.

4702. That is where the constant supply is given by the Kent Company?—Yes.

4703. That constant supply is sufficient to bring the water to bear upon a fire from a double hose, without the use of a steam engine?—I do not know myself, but I doubt if Captain Shaw had been asked to trust to that pressure upon that portion of the metropolitan district, whether he would have liked to have attended a fire there without an engine.

4704. Do you remember the fire at Messrs. Gabriel's timber yard?—I heard of it.

4705. Do you remember that a double delivery hose was worked from a hydrant without an engine during the whole of it?—I do not remember that.

4706. And that two other engines were worked in the neighbourhood, and that the water was taken for 16 consecutive hours?- I am not certain, but I believe they have gravitation pressure there.

4707. That

4707. That however proves that in certain districts of the metropolis the use of hydrants can even now supersede the use of engines, besides giving great facilities even where it cannot?—When you say "supersede," I think the word needs to be qualified, because you really do not supersede the use of engines by hydrants, unless you feel that confidence in the hydrants that you can refrain from sending an engine to a fire, and I do not think that any part of the district is so provided.

4708. I understood you to state that in Manchester the chief of the brigade told you that the pressure at the time was about 55 lbs?—About 55 lbs.

4709. That is not very much in excess of the amount which you condemn in this particular district?—I am not condemning the pressure.

4710. But condemning it as a means of utilising the hydrants without the use of engines?—Only you are, I think, forgetting this, that with regard to the pressure of 55 lbs., that that is when the pipes have not been drawn; the moment you have put on a hose then the pressure is reduced.

4711. But you see that for 16 hours the water was so drawn by a double delivery hose applied to a hydrant?—If that was so, of course, that tends strongly to prove that they could in that particular district have been made useful.

4712. That would show that the Kent Water Company when they stated to the Metropolitan Board of Works that they had a large portion of their area under constant pressure, and when they asked the Metropolitan Board of Works to place upon that area hydrants, according to the Act of 1871, were justified in supposing that hydrants so placed could be utilised instead of engines for extinguishing a fire?—Yes; it establishes that to a certain extent, but I would say that I think you must bear in mind that the Metropolitan Board of Works could hardly deal with the important question of hydrants by singling out a small area here and there.

4713. But this is not a question of a little area here and there, but you have the whole of one company supplying a very large district in the metropolis, at which according to the evidence both at fires and from statements with regard to your own districts, and from your own knowledge, it is shown that hydrants may be applied with great utility, and yet we have the letter from the Metropolitan Board of Works, which has been so often quoted, sent round to the water companies stating that the Metropolitan Board of Works are not prepared to apply hydrants unless they can see their way to do away with the use of engines, and yet that is what they ought to be able to see their way to in this particular district?—I am afraid that there are very few portions of this particular district in which Captain Shaw could dare to attend a fire without an engine, whatever those circumstances may show.

4714. I want to know whether you agree with your Board in this, that if that were the case, and it were necessary for Captain Shaw to bring his engines to bear, you do not think it would be advantageous to bring a supply of water to bear so much earlier upon a fire as you could by the hose, if the constant supply were taken full advantage of?—There is no doubt whatever that the hydrant system, if applied throughout the metropolis, would be beneficial. Then comes the question, whether the benefit of the hydrant system, as Mr. Freeman put it, would justify the very large expenditure to be incurred; and I am of opinion, as he expressed it, that there is not sufficient justification to involve the Board in incurring the very large expenditure which would be required to do that, and we are supported in that view not only by our officers, Captain Shaw and Sir Joseph Bazalgette, but by the evidence which we have taken outside the Board.

4715. I am pressing you upon this point, because, as you are quite aware, the question of hydrants and their utility for extinguishing fires has been approved by Royal Commissions and Committees upon almost every occasion in which the hydrant question has been brought before the notice of the Government, and that it is therefore a great responsibility for the Board to take upon themselves to say, in response to all these recommendations, that they cannot apply hydrants to any part of the metropolis because of the expense?—I think no person could have gone down to Manchester and Liverpool and witnessed the results which we witnessed there, and come to any other conclusion than that the hydrant system was the proper system to be adopted, and that it ought to be adopted as soon as possible. But we saw it in operation with the powers which the corpora-

Mr. *G. B. Richardson.* 19 June 1876.

tions in both places have brought to bear upon the water supply. They have it under their entire control, and they have the advantage of that; and I think when you have the fact before you that at Manchester, although they have 300 fires in the year upon the average, yet the fire-engine does not go out above nine times a year. That is a very striking fact.

4716. And you would say, that you do not think the Board would be justified in going to the expense of increased facilities for extinguishing fires without you could supersede the use, and therefore the expense, of the system of engines?—I should say that the utility and advantages of hydrants upon the present system of water supply of the metropolis are too minute to justify the largely increased expenditure. You will remember that the expenditure, as some have put it down, would be over a million, but in my own mind I have put it down at very much less. I have called it three-quarters of a million. Every million of money, however, would cost the metropolis 35,000 *l.* for interest, and 20,000 *l.* more for recoupment of capital. That would be an expenditure of about 50,000 *l.* a year, which would be rather a large sum to pay down.

4717. Have you heard that the City have gone into the matter with a different opinion?—I have heard there is a report upon the matter.

4718. Are you aware that they have adopted that report, and that they are at the present moment prepared to place hydrants over the whole system?—I was not aware of that. Might I ask you whether you have before you Paper, No. 246, which conveys a report of Captain Shaw of considerable value upon this question of hydrants, and I think he conveys this view in the Report of 1866. It bears out the views which the Metropolitan Board of Works has expressed, and he says in the second paragraph, "I am quite aware of the magnitude of the question, the number and variety of public and private interests involved, and the great financial and mechanical difficulties which necessarily stand in the way of any change." And then he says, "I have no option but to state my opinion frankly, that it is advisable to discontinue the existing intermittent service, which is complicated and imperfect, and requires special men to work it, and to substitute for it a constant service, with a sufficient number of proper hydrants which could be opened by anyone, and would immediately deliver water without the delay of proceeding to a distance to open certain sluice cocks, and shut a number of others, in order that the whole of the available supply might flow to the required locality." And then he goes on to say that it was impossible that this could be arranged under the existing circumstance of the companies, and he states what he wants: "I am of opinion that London should be provided with a constant supply of water, at a height of not less than 300 feet above high-water mark; that this supply should be from a reservoir or set of reservoirs, and that it should be obtained by gravitation alone, and thus be altogether independent of the accidents and mishaps inseparable from pumping, or any other process requiring the use of complicated and uncertain machinery."

4719. Does Captain Shaw go on in that report to show where the mountains exist round London to supply that gravitation?—No, he does not do that, but there are certain heights and levels which might be very usefully employed, and then he gives diagrams of what he would wish done, and no doubt it is of a very expensive character. He says that it has been done in Hamburg, but unfortunately the first outlay proved so high that they did not complete it.

4720. All that shows that if we were in a position to have a water supply for the extinction of fire at very great height, and consequently at very great pressure, it would be very advantageous to use it, but it does not prove that you could not utilise your present water supply by those means so as to use it for the purpose of extinguishing fire?—No, it does not, but I think it carries conviction to the mind that unless you have a very much improved supply of water in the metropolis the use of hydrants is very greatly contracted and limited. Then comes the question whether it is the duty of a representative body like ours to incur so large an expenditure for that purpose. There are some very useful letters at the end of this report; there is the order given by the Board to Captain Shaw to report upon the 25th of June 1866, as to the inconvenience at present sustained by the difficulty of finding water at fires, and what course he would recommend to be adopted to obviate that difficulty. He says: "The

course

course which I should recommend for obviating this inconvenience would be to discontinue the existing intermittent service, which is complicated and imperfect, and requires special men to work it, and to substitute for it a constant service." And then he goes on to say, "I am convinced that the establishment of a constant high-pressure service will be found the only mode of overcoming the difficulties."

4721. Upon that point Captain Shaw in 1866, with a knowledge also of the water companies and their means of supplying the town, and knowing also at that moment that London was only supplied by intermittent supply, recommends distinctly this constant supply in lieu of that intermittent supply, and therefore must have, I presume, recommended it upon the existing water companies' system?—No doubt.

4722. And at that moment he contemplated, if a constant supply with their existing pressure were given, by the water companies generally, hydrants could be applied to the mains throughout the metropolis, and would be of use for the purpose of extinguishing fires?—Clearly so.

4723. Then why is not that principle as good now as then?—I will conclude the paragraph: "I am convinced that the establishment of a constant high-pressure service will be found the only mode of overcoming the difficulties, and that any attempt to improve the present arrangements will only tend to prolong the existence of a system which, so far as fires are concerned, is most imperfect and unsatisfactory."

4724. Will you now answer my question?—Let me answer your question by reading this note: "The above report was ordered by the committee to be sent to each of the water companies, and their replies follow." Here are the replies in which they themselves point out the difficulties and impossibilities of doing it.

4725. Every one of which replies is founded, as well as Captain Shaw's report, upon the question of the existing intermittent supply of water, recommending that a constant supply should be established throughout the metropolis, and that if such a constant supply were established throughout the metropolis then they could use the existing system, and the existing pressure for the purpose of extinguishing fires by hydrants. The same position of things exists at the present moment, and if you had not been to Manchester I suppose you would have been of the same opinion still, that if the water companies gave you constant supply you could use the hydrants beneficially for the extinction of fires?—Your remark is purely with regard to the question of hydrants; you are not speaking of the difficulty of the Board in calling for a constant supply.

4726. No; what I am saying is, that what you have been reading refers to the change as between the intermittent supply which exists, and the constant supply which Captain Shaw suggests, and infers that if you obtain that from the water companies you will be able to bring to bear upon fires, through such appliances as hydrants, greater power than you can at present; you never contemplated doing away with engines altogether, but Captain Shaw thought that by this system of constant supply you could utilise, by hydrants, the water more beneficially for the extinction of fires; the same thing exactly exists at the present moment?—But Captain Shaw was arguing as we are arguing at the present moment; he speaks of constant supply as constant pressure; by constant pressure he means something like a gravitation of 300 feet.

4727. He was speaking of the intermittent supply then?—He gave his opinion, and we sent that opinion to the water companies. They say in their report that, in fact, they cannot give it.

4728. But, subsequent to that, certain companies have given constant supply?—In very small portions of the metropolis.

4729. We have 660 miles mentioned in Major Bolton's report, which was an official report?—But that is only mains; they have been always charged ever since they existed.

4730. Then why have not hydrants been placed upon those mains which were always charged?—Because those fire plugs were always used in olden times, and now it is stated that they could not be used; that they would be blown out.

4731. But by the terms of the Report of that Committee, and when the Metropolitan Board of Works, through their solicitor, accepted the position (for I was

Mr. *G. B. Richardson.*

19 June 1876.

a member of the Committee, and remember the facts), that the responsibility, if that clause were introduced, would fall upon the Metropolitan Board of Works to carry it out, why have you not, since 1871, accepted the responsibility and carried it out?—Simply because, as Mr. Freeman stated, it was a question of expense upon the one hand and of benefit upon the other. There is very little more, or practically no more, pressure in the mains. Practically it is precisely the same, because if the main had a pressure of 50 lbs., there would be the same pressure on the service-pipe connected with it, so long as no water was drawn from it. If you draw water from it, it makes an important difference; we have nothing to show that if water is drawn from the pipes they will still give us the pressure we need. You will have the engineer before you, who will tell you that in the judgment of the Board it is useless to spend this large quantity of money to place hydrants throughout the whole of the metropolis, with the very limited advantages which would arise from them.

4732. Yet we have facts before us to prove that where those hydrants have been applied, these very results have been arrived at?—But you have it only in one district. It is only the Kent Water Company's district; it is not in the East London district as well.

4733. Will you hand in that book containing the reports and letters?—I will. (*The same was handed in.*)

4734. Have the Metropolitan Board of Works ever experimentalised with regard to testing that in other districts?—Only that the engineer has made experiments.

4735. In Sir Joseph Bazalgette's report, he states that he has made experiments, but only under such unsatisfactory conditions that you cannot judge of the result?—That is not the view of Sir Joseph Bazalgette.

4736. It is not the view that the Board take of the matter?—Nor is it the view that he intended. He meant to say that he has ascertained the pressure, because the moment you put on a gauge where there is constant pressure you ascertain the pressure.

4737. He states, that in order to make the experiments he had made practically useful he would have to go through the other conditions, therefore, the experiments he made were practically valueless, because he had not fulfilled the conditions which alone could prove its success?—You put it rather in an adverse view. He made certain experiments, and got certain results, but what Sir Joseph Bazalgette means is that those results which he obtained are not to be depended upon as being permanent, but that if he had been able at the time to go and draw a large quantity of water off those pipes, probably he would have found that the pressure, instead of being what it proved itself to be, would be very much less. It is not as you would probably represent it to be, that the result would be more favourable to the water companies, and less favourable to the Board. What he means is that the result he has got is the most favourable that could be, but that if he had further opportunity of making observations such as would satisfy himself, the result would probably be very much less favourable than it appeared.

4738. He states that "it is probable that in some instances the pressure is reduced, and in others increased at night, but as far as our limited observations go," which are founded upon the Kent Company's district, "the majority show a higher pressure, and there are only two observations where the pressure is altogether lost, and a third where it is very much reduced." Now, that is his report, and on reading it, it does not carry out the version which the Metropolitan Board has put upon it, that that experiment was of such a thorough character as to necessitate no more extended inquiry?—I believe that was the view which Sir Joseph Bazalgette intended us to take, but I believe he will give you his own views upon the matter.

4739. To sum up generally your evidence, I suppose I may infer that you would recommend the increase of men that you have stated?—Certainly, I think the brigade is entitled to an increase of men for the purpose I have stated before. I think they are hardly dealt with in not being allowed to leave the station for any amusement or the natural wants of their families, or anything of that kind.

4740. What would you recommend with regard to the police?—I think the suggestion which was made by this Committee, and approved of by Captain Shaw,

Mr. G. B. Richardson. 19 June 1876.

Shaw, was a very valuable suggestion. I think if it could be arranged that at every police-station there should be two or three men thoroughly instructed in the use of fire plant, and with some small quantity of plant which could be made use of at a moment's notice, and that all the police stations should be connected by wires with the fire-brigade stations as well, it would be a very great protection to the metropolis and a very great advantage, and I cannot see why it should not be adopted.

4741. Now, we have both an increase of men and an increase of stations by adding to the police stations as stations at which calls to fires could be received; what is the summary of your opinions with regard to the means of extinguishing fire, namely, with regard to hydrants?—I am obliged to bring myself to this result, that I do not believe any very large practical result to the metropolis could be arrived at under the present system; I do not think that joint-stock companies can be called upon to do that which is required for the security and the protection of property in the metropolis. To ask them to do so is to ask them to do a thing which is not for the benefit of their shareholders, and I may say, further, that I do not think a large place like London, with its immense population, should be supplied with water by the joint-stock companies; I think it should be done by a metropolitan authority, and I am confident that if the metropolitan authority had the control of the water supply of the metropolis in a few years you would have the water supply based upon a very different system from what it is at the present moment.

4742. Do you believe that the water system will be changed so as to give you the amount of fall you anticipate?—We see at Liverpool and Manchester that they go 15 miles out for their pressure, and there is no reason why you should not go out any distance for your pressure. This report will show the distance of the reservoirs. In Manchester, the end of the largest reservoir which supplies it with water is 18 miles away, but the one which gives the pressure upon the mains is nine miles away. Then with regard to Liverpool, the distance is——

4743. Where the local authority has the water supply, they are not deterred from going a considerable distance to get the necessary pressure?—Quite so; and it would be a very great advantage to the metropolis to have that pressure. We have very little doubt that in a few years, if the Metropolitan Board had the charge resting upon them, that would be the result throughout the whole of the metropolis.

4744. In your opinion, that could not be obtained through the medium of the water companies?—No.

4745. Is there anything which you wish to add to the evidence you have given?—I would wish to state a matter which I think has not yet been stated to the Committee. The Fire Brigade Committee is a committee which acts, to a large extent, independently of the Board. The Board have in their Act power to delegate all their power to a committee, and they have delegated them all, except a small portion of their authority, to this committee.

4746. But those powers all appear in your Act, do they not?—Yes, but not in the way that they have been acted upon. In the 28th section it says: "The Board may delegate any powers conferred on them by this Act to a committee of their body; and such committee shall, to the extent to which such powers are delegated, be deemed to be the Board within the meaning of this Act"; and I think you should have it on your proceedings exactly how that has been acted upon, and then you would have it really complete. This is the resolution of the Board of the 27th July 1866, that there should be appointed a committee of 15 members, with power delegated to them as follows: "To provide and maintain engines, horses, and accoutrements, tools, and implements, as may be necessary for the complete equipment of the force, and to carry out the powers of the Board, as contained in Section 4 of the Fire Brigade Act; but this order is not to extend to the purchase of fire-engines, and nothing contained in Sections 7 and 8 of the said Act shall be considered as included in the powers hereby delegated. Also, the power of leasing, purchasing, and sale and contracting, and all the several powers contained in Section 5 of the said Act; the power of arranging and procuring payment of contributions, and exercising the powers contained in the 13th section of the same Act. Also the power to take all necessary steps to

Mr. *G. B. Richardson.*

19 June 1876.

procure payment of sums due or payable in respect of fires in chimneys, and the enforcing penalties before the proper authorities, and to settle and adjust all such matters. Also, to make and carry out arrangements and agreements for, and to authorise the employment of, the brigade upon special services, and to execute all the Board itself could do with reference to the matters embraced in the 30th section of the same Act. That the committee so appointed, and to whom the powers are so delegated, shall not have the power to extend the number of the stations already existing without the authority of the Board. For all the several purposes, or any of them above delegated, the same committee may execute deeds or other instruments, with the seal of the Board or not, may enter into contracts, settle accounts (but not draw cheques), give receipts and discharges, and enter into arbitrations, and make all instruments, and do all such acts and deeds, matters and things, as fully and effectually as this Board itself could have done if the delegation hereby made had not been ordered, not less frequently than once a month, the committee to report to the Board what steps they may have taken under this resolution and order." I think it is desirable that you should have that upon your minutes, because it shows that the individual members of the Board have nothing very much to do with the smaller acts of the Fire Brigade Committee; it is only the larger ones which are excepted in this resolution which come under the Board's consideration.

4747. Mr. *Ritchie.*] Do you think upon that, that any further power should be given to the committee?—I think not. I think every power is given which is necessary, and there are only those points reserved which it is necessary the Board should have before it for discussion. It is only the larger powers which are excepted.

4748. But you have sometimes found, have you not, that recommendations which have been made to the committee have not been adopted by the Board?—Sometimes they have not been carried by the Board, after being discussed at some length.

4749. You are aware that one proposition was made by the committee that a further contribution should be asked for from Parliament, which was not adopted by the Board?—That was before the New Loans Act was passed.

4750. I do not mean for capital, but for revenue; that Loans Act does not affect your revenue?—I was upon the Fire Brigade Committee at that time, and I know that we were behindhand something like 20,000 *l.*, and it was in consequence of that that some measure was taken; whether there was a debate at the Board or not I cannot remember, but, at all events, it resulted in getting that alteration made by which the Board were empowered to put down the whole of the cost of plant and stations to the Consolidated Loans Fund.

4751. But the matter I referred to was when you took over the fire escapes. It was recommended by the Committee then that further powers should be asked from Parliament to increase the rate, and it was not adopted by the Board?—No doubt it may be so.

4752. You would not recommend any further powers at all events being given to the Fire Brigade Committee?—No, I think that would be quite sufficient.

4753. Would you be disposed to recommend any alteration in the constitution of the Committee, so as to provide for any representation by the fire insurance companies or by the Government upon the Committee, that is to say, seeing that the insurance companies contribute large sums, would you not recommend that they should in consequence of those contributions have some one to represent them and assist them in spending their own money on the Committee?—That is a point that I never considered. I do not think it would at all add to the usefulness of the Board to introduce strange outside individuals, if I may use the term, to come and take charge and connect themselves with the proceedings of the Fire Brigade Committee.

4754. But is not that strictly a question of taxation and representation going together?—To a certain extent it is, but you will bear in mind that there is no other way of reaching insurable property, except through insurance offices. It is not really they who pay it, as the premiums pay it.

4755. Is it your opinion that the question of premium is relative to the probable

bable losses?—It must be relative to the probable losses, because we find the premiums vary according to risk.

4756. Do you know whether premiums have been altered, either reduced or raised, since the number of serious fires was lessened?—That I do not know. I should rather have said, from what I know of some property of my own, which was a steam flour-mill, that the insurance offices were trying to increase the rate rather than reduce it. I used to pay 24 *s.* per cent. for a steam flour-mill; then the fire insurance company raised the rate to 30 *s.*, and then, afterwards, I got it down to 27 *s.*; but I do not think that that had anything to do with the fire brigade matters to any extent.

4757. Your experience does not go to this: that the more you reduce the loss by fire the more the insurance companies reduce their premiums?—It may be so, possibly, with regard to risky property, but the premium, as everybody knows, on ordinary insurable property in houses, is 1 s. 6 *d.* per cent., and that has been the same for years and years, and is likely to remain the same.

4758. So that, notwithstanding the fact that the proportion of serious fires has been largely reduced, the premiums of the insurance companies have not been reduced?—They have not been reduced.

4759. And therefore it has been so much in their pockets?—Certainly that supports my view, that in the event of any increase of the fire brigade they should be called upon to contribute their quota.

4760. They at present contribute 35 *l.* per million?—Yes.

4761. Do not you think that if the insurance companies had to contribute at all, their contributions would be more equitably based upon the amount of the taxes that you derive from the public; that is to say, supposing there is one-third of the whole of the property in the metropolis insured, do you not think that it would, perhaps, be a fairer way of estimating what the insurance companies ought to pay, by making them pay one-third of the amount which is contributed from the rates?—I quite agree with you, but I think the proportion of property insured and insurable, but not insured, is something like two-thirds for the one and one-third for the other.

4762. That is to say, that two-thirds of the property is insured, and one-third not insured?—I think so; but when you come to cast up the figures that we have before us, and find that the insurance companies are paying 18,905 *l.*, while the Board is paying 48,148 *l.* 11 *s.* 4 *d.*, and inasmuch as you must strike off from that 48,148 *l.* a considerable sum in respect of protection of life from fire which the insurance offices have nothing to do with (I do not know how much to strike off), what would be left would be very nearly half-and-half, because there are a number of men employed in the protection of life from fire to be deducted from the calculation.

4763. But if any alteration were made in the mode of contribution by the insurance companies, you think it is a fair way to put it, that they should contribute a per-centage of the amount contributed by the public, because if one-half of the whole property is insured, the insurance companies have a direct interest in the efficiency of the brigade, so far as the half of the property is concerned?—I would put it this way, that the property insurable within the metropolis ought to pay the whole cost of the protection from fire; that that of which you can ascertain the value should pay through the insurance offices; but what you cannot ascertain should fall upon the rates.

4764. Mr. *Hankey.*] In that way it would fall upon the rates twice, would it not?—Not at all, because the question is, how should the incidence of the taxation fall, surely upon the property which is insurable; there is a portion which is insured, and there is a portion which is not insured; and that portion which is not insured you cannot get at, therefore you must throw it upon the metropolitan rates; that meets the question Mr. Ritchie put to me.

4765. Mr. *Ritchie.*] Is it your opinion that if further protection be given, the insurance companies should bear a certain proportion of the additional amount?—They should bear a certain proportion of the additional amount, according as I have stated.

4766. You do not agree with Mr. Freeman upon that point?—I was not aware that Mr. Freeman gave any evidence upon that point; but if he gave different evidence, then I certainly disagree with him.

Mr. G. B. Richardson. 19 June 1876.

4767. Are you aware that the insurance companies themselves, when the new brigade was originally formed, suggested that their contributions should be based in the manner I have stated?—My memory fails me upon that point, but I have no doubt it was so, only that they proposed that they should be charged a specific amount.

4768. They wished the limit of their contribution to be 10,000 *l.*?—Yes.

4769. This is the clause they proposed: "That the total annual sum so to be contributed by the associated offices should be equal to 30 per cent. of the net amount raised annually by a metropolitan rate for the expenses of the brigade, but should not exceed in the whole 10,000 *l.*, it being expressly provided that, in consideration of the payment of such composition by the associated fire offices, all fines incurred (as before suggested) on property insured by any of the associated fire offices be entirely remitted, except as regards chimney fires hereinafter provided for"?—I remember that.

4770. And that the insurance companies proposed to base the amount of their contribution on the amount of the rate, and deduct that from 48,000 *l.*, the amount of the rate levied?—Yes; taking one-third, and that was without the protection of life from fire.

4771. Captain Shaw's version, in answer to Question 1175, was to this effect: "I can tell the amount insured; it is 540,000,000 *l.*"; that is, one-third was insured and two-thirds not insured; so that if you take the cost of the protection of life from fire at 15,000 *l.*, which I think it was stated to be, that brings down the amount raised by rate for the protection of property from fire to 33,000 *l.*?—Yes.

4772. So that if it was based upon the basis we were talking of previously, the insurance companies would only have to pay 11,000 *l.*?—If these figures are correct, they are paying something more than one-third.

4773. Then going back to the opinion you expressed, that the insurance companies should, in any increase of rate, also bear their proportion, are you still of opinion that it would be advisable to base their contribution upon the amount contributed by rate?—I am distinctly.

4774. Even although it should reduce the amount they contribute at present?—I contend that insurable property ought to pay the whole of the cost of the protection of property from fire.

4775. Now I wish to ask you one or two questions about the water: Captain Shaw I think in this report which you have quoted from, basis his desire for hydrants first upon the advisability of having high pressure, and constant high pressure, and also upon the fact that it would enable him to get at the water much quicker than he can under the present system, even although he had to use engines?—I was not aware that he said that.

4776. I will refer you to page 19 of the second part, in which he says: "The course which I would recommend for obviating this inconvenience would be to discontinue the existing intermittent service which is complicated and imperfect and requires special men to work it, and to substitute for it a constant service, with a sufficient number of hydrants which could be opened by any one, and would immediately deliver water without the delay of proceeding to a distance to open one sluice cock, and shut a number of others, in order that the whole of the available supply might flow to the required locality"?—He does say so.

4777. So that he placed some stress upon hydrants giving him or any one water, immediately it was wanted?—Yes; still I think that must be qualified by the fact that assuming constant service to be given by the existing water companies when he had got to the water, it would still require other persons to go round and shut the water off at other places, in order to give him the pressure which he wanted.

4778. But I am speaking about cases in which there is really not the pressure, but the desire to get at the water as quickly as possible?—Yes, but in the document I have put in signed by the chairman of the Board and myself, Captain Shaw distinctly states that so far as the mere supply of water is concerned, it is just as quickly obtained from plugs as it is from hydrants; but then the honourable Chairman asked the question whether it could be delivered upon a fire, and he said it could not; he said there would be four minutes difference

in

in bringing the water to bear upon a fire from the plug as against the hydrants.

Mr. *G. B. Richardson.*

19 June 1876.

4779. *Chairman.*] I should like to ask you this question, with regard to Captain Shaw's opinion having differed since that report, because, in answer to a question before this Committee, No. 1552, Captain Shaw, upon being asked with reference to the application of hydrants, and whether he thought it advantageous, said: "Certainly, as far as I am concerned professionally, I should very much like to see a hydrant placed upon every main which is charged;" and in answer to Question 1556, he says, "There can be no doubt that the hydrant in all cases is a superior thing or four purpose"?—I know that that is the opinion he stated, but I think the document before the Committee, which is signed by Sir Joseph Bazalgette, and countersigned at the corner by Captain Shaw, approving entirely of the remarks made by Sir Joseph Bazalgette in respect of hydrants, and upon which the committee based their report, was very much against the expenditure of half or three-quarters of a million.

4780. Mr. *Ritchie.*] I understand that the Board do not feel that they are justified in putting down any hydrants which might be available until they are able to put them down throughout the whole of the metropolis?—That is not quite correct, because I think I am right in saying that the Board would put down, and indeed have ordered, hydrants where the water companies have put down new mains, or at all events are quite prepared upon those new mains to fix hydrants.

4781. How many places have been availed of in that way?—Only one or two. The last one that I remember was a neighbouring street, Northumberland-avenue. We ordered hydrants to be placed there, and again in the proposed street in Shoreditch we have ordered hydrants to be placed.

4782. Mr. *Forsyth.*] What would be the cost of a hydrant?—If laid down with the main at first, I do not think it would cost more than 4 *l.* or 5 *l.*, but if laid down afterwards you must have saddle pieces and earthwork, and one thing and another, which would amount to about 10 *l.*

4783. Mr. *Ritchie.*] Did you take that into account in your estimate?—Upon that point we had evidence from our officers in Liverpool and Manchester that the cost was primarily about 30 *s.*, and the fixing of them would bring it up to 3 *l.* 15 *s.* or 4 *l.* altogether.

4784. Where do you get your estimate of 10 *l.* from?—Because the hydrant proper is nothing but what is underground, and then you want a standpost, or something or other with it. I am speaking from evidence which was given to the Board that practically they would not be put down under 10 *l.*

4785. But do not you think that it would be very desirable for the Board to put down those hydrants upon the mains, even if they were not new. Given an old main, and supposing it cost a little to remove the hydrant when a new main was laid, do you not think that this would be advisable?—Possibly it might. I think the Board might put them down in Thames-street, or places where there is this large amount of warehouse property, if they could see anything to justify them in the way of there being pressure sufficient to discharge into the premises.

4786. Is it not the fact that the Board have only looked at it as a question affecting London as a whole?—We have dealt with it in its entirety. In all the evidence which has been given by Mr. Freeman and myself, I must beg you will take it as being given as affecting the entirety of London, and not as regarding particular special spots.

4787. But there is no reason why these special spots, if there were no reason to the contrary, should not have hydrants upon them?—No, not at all; but we have not dealt with the question piecemeal. It has been suggested that we should try the system along the water side, near some of those large warehouses.

4788. You think the Board may do that?—I think when we have disposed of this question we should be glad to put down some, and see whether it would work, because if we found it would work in some places it would work in others. In that document I have put in, signed by the chairman and myself, it is shown very clearly that we could by the utilisation of hydrants be saved the cost of carrying

Mr. *G. B. Richardson*

19 June 1876.

engines to the fires; we should be saved many thousands a year; the horse hire alone costs many thousands a year.

4789. There are two sides to the question; no one can doubt that it would be cheaper, almost at any price, to do without engines, but then comes the other question, whether it would not be true economy to take steps to enable fires to be treated more quickly in some districts, although you could not dispense with the engines altogether?—No doubt.

4790. *Chairman.*] Supposing that Captain Shaw's statement, that a larger number of stations, and a larger amount of material in the way of plant, were required for the protection from fire in London, could you not look at it from that point of view as a substitute for that increased number of stations and plant. As if you got greater facilities and means of bringing the water to bear upon fires you might do away with the necessity of an increased number of engines?—You have employed the argument which I have myself used again and again, and I have no hesitation in saying that if we had the use of hydrants in the metropolis we might, I believe, do without several of the existing stations that we have. We see at Manchester, we see at Liverpool, that they can simply have a hose and a reel, with a little quick apparatus drawn by one horse, which runs to fires as quickly as possible. They rely upon their hydrants, and trust to them, knowing that they can rely upon them, and the consequence of it is that there is a material saving. Now assume that there were anything of that kind in the metropolis, there is no doubt that we should not have to increase our stations and have a number of men employed in the various outlying parts of the metropolis, which has always seemed to me to be a mistake. I have expressed my opinion once or twice to Captain Shaw that the men are far too much scattered, and not sufficiently concentrated.

4791. Mr. *Ritchie.*] Have you ever urged these opinions before the Board?—The question does not come before the Board, but I did raise the question last Friday, when it was debated whether we should not erect another establishment upon Shooter's Hill. I voted against it, because there is a police station close by it, and I think that if the police station were utilised by some of the men being qualified to make use of fire plant, the fire plant being lodged there, all that is necessary would have been provided, and that there was no necessity to go to the expense of building a station and having four or five men there.

4792. Has it been brought before the Board that the whole of the City was, in fact, under constant pressure?—I do not think it is more under constant pressure than any other part of the metropolis; that is to say, that the mains through the streets are always charged with water, and that their service mains which supply the houses are intermittently used.

4793. But the Board have never considered the expediency of putting hydrants all over the City, have they?—No, we have not done so. We have only dealt with the matter in its entirety, and not as separately.

4794. I think that this report of Captain Shaw's, from which I read an extract, was sent to all the water companies?—Yes, it was sent to all the water companies, and the letters of the water companies follow.

4795. Can you tell me what the meaning of the answer of the East London Water Company is: "The Company are prepared to comply with the provisions of the Act 15 & 16 Vict. c. 84, and of the Act of 28 & 29 Vict. c. 90. Upon receiving a requisition from the Metropolitan Board of Works, the directors will give the subject immediate consideration"?—I read that over last Saturday evening, and all that it produced on my mind was a smile, because I could not help remarking to myself that if the others had known that this Committee was going to sit they would hardly have written the letters they did. And when I came to the letter of the Secretary of the East London Waterworks Company I thought he must have been wiser than the others in trying to say as little as possible in as few words, for there is no meaning in it.

4796. There was no reply to that?—No.

4797. The position of the East London Water Company is this: you sent them a letter in which you asked them to do certain things suggested by Captain Shaw, and they reply that they are quite willing to comply with the statute?—Yes.

4798. And

4798. And then you took no further notice?—There was nothing to be done in the matter.

4799. What was the good of sending the circular round to the East London Company at all?—I only give you their opinions. The Kent Company gives you a very good letter.

4800. With regard to the East London Water Company, the Board were not prepared to meet that letter?—If we had proceeded in the matter it would have come to the same question as we have before us now, whether or not the Board should put hydrants upon the mains, and whether the pressure was or was not sufficient to justify it.

4801. But nothing was done with regard to any of those answers?—I believe not. The matter came before the Fire Brigade Committee, of which I was not a member, but if anything had come of it it would have been stated to us.

4802. In the replies contained in this report, I think almost every company lays very great stress upon the question of the turncocks sometimes being late?—Yes, they do so, generally speaking; and they make various suggestions as to their living near the stations, but practically speaking that is not of much value, because the turncock is obliged to be on the district on his duties. You cannot find the man when you want him.

4803. I suppose you know that about double the number of fires occur in the night that occur in the day?—I do not know what you call night. If you take it from eight in the morning to half-past ten at night, and you cannot call half-past ten o'clock night, there are two-thirds of the fires in the day time and one-third at night. It all depends upon what you call night.

4804. Mr. *Hankey.*] When it is dark?—Then there are very many less. I took the trouble to take out the fires in my own district from the 18th January, to find out how many occurred before and how many after half-past ten, but it was not anything like one-third.

4805. Mr. *Ritchie.*] At any rate in this return we see that between eight and 12 o'clock at night there are 6,000 fires occur out of a total number of 16,000, leaving 10,000 for all the rest of the 20 hours, and during all that portion of the day between eight and 12 at night, the turncocks could be pretty safely reckoned upon as being at home?—Yes.

4806. So that if accommodation could be made at or immediately adjacent to the stations for the turncocks to live in, it would, under the present supply of water, enable the engines to work quicker than they can sometimes, would it not?—There is nothing to prevent the turncocks finding their lodgings near the stations of the Board, but the Board stations are not sufficiently large to enable the turncocks to live within the stations. They are not large enough for the men.

4807. But several representations have been made by the water companies that when any new station was built accommodation for the turncocks should be found within it, for which they would be willing to pay?—I am not acquainted with that.

4108. Upon page 28 of that report it says, "Were the Metropolitan Board to adopt some more uniform and perfect system of marking the places of plugs and of their commanding cocks than parish authorities have practised hitherto, there would be a removal of much of the difficulty said to be felt now in the use of water-keys by firemen or others, when any neglect in the call of a turncock has occurred;" notwithstanding that representation from the New River Company, is it the fact that the Metropolitan Board of Works have discontinued the marking of such cocks as were hitherto marked?—I am not aware that they have discontinued the marking. I am not aware of all those details. I thought it was the parish authorities who did that work.

4809. When the parish authorities had that duty they did it, and also the London Brigade?—I must shelter myself under the fact of not being a member of the Fire Brigade Committee and being unacquainted with this matter, but Mr. Thompson, who will follow me, will be able to answer these questions better than I can.

4810. With regard to the increase of the number of men, I think you stated, with great consideration for the comfort of the men, that you thought they did not have sufficient liberty?—I thought so.

Mr. *G. B. Richardson.* 19 June 1876.

4811. What station was it you went to?—I went to Blackheath and Lewisham. I was unable to accompany my colleagues to the other stations. I had an engagement.

4812. And the opinion you have formed upon that matter is based upon your experience at Blackheath and Lewisham?—And what I have read of what took place with my colleagues at other stations, because we have a shorthand writer's note of all that took place.

4813. You made personal inquiries, and I think you gave us the particulars of the number of hours' leave the men had away, and I may take it that your estimate was principally based upon what you saw there?—Yes, upon what I saw there. The men told me that they never could go outside the station without leave, without subjecting themselves to a fine of half-a-crown. They were virtually tied there the whole day, even though they were doing nothing.

4814. And you stated, very fairly, that you thought the addition of one man at each of those stations would produce the result you thought desirable?—Certainly, one man at each of the outlying stations of the metropolis.

4815. That would be 25 per cent. more?—There are 50 stations, and that would be 50 men.

4816. But you went to the stations at which the complement was four men, and you say, in order to give proper relief to those men from over attendance, it would be necessary to add one man to each of those stations. That would be one man to four. Then it naturally follows, when you come to stations where there are eight men, that one man being necessary at a station with four men, two men would be necessary at a station where there are eight men?—Is it not fair to presume that if there is a station with eight men, there would be more leave there granted than there would be at a station where there were only four men.

4817. Not necessarily, because they have more duties to perform?—The evidence of Mr. Freeman went to the effect that there would be, at the various stations of the metropolis, six or seven men doing nothing but waiting for a fire. Surely one might fairly argue that those men might be allowed more leave than where there were only four men, of whom two must go out with the engine. One is on duty, and the other must remain.

4818. I did not understand you to refer to the men's work but to their inability to get away. That was the point that I understood you to take up?—Yes.

4819. These gentlemen who went to Paddington, saw a certain number of men whom Captain Shaw, who has the control of this matter left in his hands, thinks it necessary should be kept on duty, at that station, and therefore I take it that the same thing would apply to the station which has eight men as to that which has four men, with regard to the attendance of the men on duty?—I do not think that the ratio of the attendance of the men need be the same; in a station of four men you have one man on duty and three off, and each is only allowed a certain amount of leave; when you have eight or 10 men at a station one is employed, and there are practically eight or nine doing nothing. Now I must be surely right in saying that more leave could be granted to the nine than to the three.

4820. Can you tell me how it is that one station is larger than another?—Because there is more liability to be called out.

4821. I take it that the reason for not allowing the men to go out is that they may be wanted at any moment?—Yes.

4822. The larger the station of course the more the likelihood of their being required, and that is the reason why it is larger?—But it is a question of probability, and if you have eight men doing nothing you must be able to give them more liberty, as you would have eight men to do the duty that might be required.

4823. But there would be more than one engine, would there not?—Yes; but if the engine went out, you would soon be able to get the men back.

4824. But you spoke about a man going out shopping; if he was out shopping, you could not get him back very well, and what I am putting to you is, that at an eight-man station you would probably have more escapes, would you not?—But I am speaking of day leave, not of night leave.

4825. With regard to Deptford, do you know how many men they have at the Deptford station?—Eight men, I believe.

Mr. *G. B. Richardson.*

19 June 1876.

4826. Is it not very fair for us to assume that Captain Shaw would appropriate only the number of men requisite at each station to perform the duties of that station?—That is so.

4827. And that being so, we cannot consider a station which has eight men more manned than a station with four men?—If you take it in that abstract point of view the argument will stand good.

4828. If, at a station at which only four men are employed, you would advocate one man more being employed, it necessarily follows that where there are eight men you would require two additional men?—But I think that if I had eight men at a station, and only two on duty, I should be more inclined to let them go than if I had a smaller number.

4829. But that is the full number; it sometimes occurs that you have to lend a man or two to another station?—I am dealing with it in its entirety, but in that case then comes in my additional men to give the additional leave.

4830. What I wished to ascertain was, whether you did not think it probable that in a station of eight men, the number of men were only proportionate to the duties they had to perform?—Would it not be fair to put it in this point of view: that if you have eight men, the day being 24 hours, and these men being at work night and day, you could give 24 hours' relief to all the other men.

4831. If we were to follow up the basis of one man to four, there being, at present, roughly speaking, 400 men in the brigade, that would require 100 men more?—Yes.

4832. And you have recently settled for a new head-quarters station, I am pleased to hear?—Yes.

4833. I suppose you contemplate having more men at the new head-quarters station than you have at Watling-street?—I believe they have contemplated that 50 men shall belong to the new station.

4834. Do you mean 50 altogether, or more than the Watling-street establishment?—No, 50 altogether. I believe that to be an increase of something like 40 men.

4835. So that if we adopt the basis of one in four, that will be 100; and at the head-quarters station there would be 40 more men, so that by that means we arrive at 140 more men on that basis without increasing any of the duties?—Yes, upon that basis; but I should say that 100, or less than 100, would be quite sufficient.

4836. Are you aware that Captain Shaw contemplates dividing the D district into two?—It would be very properly divided into two, and have another superior officer over the station.

4837. That would of course entail a few more men, because you would require to have a chief station in each division, and you would require more men at the chief stations of that division?—That might require one or two more.

4838. You were speaking about the Woolwich station; you mentioned the fact of a fire to which the Woolwich engine went, that not being within the Woolwich area?—That is so.

4839. If it is ordered to go it must go, I suppose?—If it is called to go they would telegraph to the next station, and would go upon their own authority if they felt it was a good and proper call; but they generally take good means to ascertain that the calls outside the metropolitan area are really valid calls, because sometimes they are false ones.

4840. You know the station was closed?—Yes, for 38 minutes.

4841. Do you think that that was desirable?—It would be undesirable as a practice, but seeing that so few fires occur in the district, I do not see any great danger to the metropolis.

4842. Do you know how many stations were closed the other evening on the occasion of the large fire?—No; none of the details have been reported to us.

4843. You stated that the men principally refused the superannuation scheme because the men employed under the old parish authorities were not included?—They were left out not intentionally, but because it was not known that there was any such provision required.

4844. But, of course, you know that there was a much stronger reason which induced the brigade to refuse that scheme, do you not?—I never heard any reason that was worth anything.

Mr. G. B. Richardson. 19 June 1876.

4845. Was it not their impression that they would have to pay up by that scheme a lot of back money?—I heard something said about that, but the words would never justify it in the least.

4846. At any rate, it was a misunderstanding on their part, which they might possibly fall into from the words as they stand?—I ventured to say, when I was questioned upon that, that it was not possible for any person who understands English to misunderstand it if he reads it correctly; I think the honourable Chairman took that statement as a proper one.

4847-8. It was your own scheme, and a man is naturally prejudiced in favour of his own words?—I think it would bear no other construction than that.

4849. I do not profess to have any great knowledge of the English language, but it does appear to me to be open to the construction that the men put upon it?—It says, "That every man's service shall, for the purposes of this scheme, date from the day of the scheme coming into operation, and he may become at once entitled to have his service reckoned from the time he joined the brigade upon payment as follows, viz., if he joined since the 5th July 1865"; that is to say, if he was not a member of the old brigade, then he is to pay "a sum equal to the amount standing to his credit in the firemen's saving fund."

4850. There was an amount standing to his credit in the firemen's saving fund?—That was so.

4851. Then you say here, if he is to take advantage of the superannuation fund, he has to pay a sum equal to that standing to his credit. I confess it seems to bear the construction the men put upon it, that the amount standing to his credit was to remain standing to his credit, and that in addition to that he was to contribute a similar amount. At the bottom of the scheme there are the words, most carefully inserted, "The amount at credit of the firemen's saving fund shall remain at the men's disposal as hitherto." This means that in the event of any of them now in the service not wishing to come under the superannuation scheme they could withdraw it?—Yes.

4852. Does not it mean that if they do wish to come under the superannuation scheme it is not to remain at their disposal?—If they take advantage of this scheme they would transfer that sum to the Board, but until they had transferred it to the Board it was their own, and nobody could touch it but themselves.

4853. But then you say in the 4th Clause that if the men do wish to come under this scheme, they are to contribute a sum equal to that amount, which seems to bear the construction that it is in addition to the amount?—It says "a sum."

4854. As you disavow any such idea it is not of any importance, except that it shows the men had some ground for rejecting the scheme upon that basis, because that would have been a very difficult scheme for the men to have complied with, and therefore if the men read it, as I and my honourable friend on my right have read it, they would have been justified in rejecting it, would they not?—Yes; they undoubtedly would, but then the argument comes again with as much force, that if they did misunderstand it, according to their own showing, why did they not give themselves sufficient time to see what it was intended to convey.

4855. From their point of view the thing was such a heavy tax upon them that they could not contemplate accepting it at all?—They might have asked the question as to what the Board meant, but it was never intended; indeed it would have been perfectly absurd to have put such a proceeding before the men.

4856. In your answer to Question No. 4498 you place great stress upon the formation of a superannuation scheme which should be acceptable to the men?—First of all I draw the distinction between the men who are yet to join the brigade and those who are in the brigade. A superannuation scheme, I submit, must be one that will not deter men from joining the brigade hereafter. It is most important that that should be considered, and therefore it must be a fair and equitable scheme. Then we come to those who are in the brigade, and I have shown how infinitely more those who are in the brigade must benefit by a superannuation scheme which does not go back, and make them pay their quota to that scheme from the time they joined the service, for which sum they are allowed all the benefits of the scheme, as compared with what they would have had to pay had they contributed from the commencement of their service.

4857. Do

4857. Do not you think that it might have been advisable to take Captain Shaw's advice when the scheme was being prepared, and had a conference with the men upon the subject?—It seems to me, as I said before, that if you are going to make the men a very large present, which really was a very considerable present of money, to ask them whether they liked it, would be almost an absurd question.

4858. Your reason for submitting the first scheme was that it was based entirely upon their own contributions?—Mr. Thompson wished a scheme to be submitted to the men, and it was so submitted.

4859. And you thought that because the Board was contributing 500 *l.* to the new scheme it was unnecessary to consult the men; is that so?—No, I will not put it upon that ground, but because the scheme was so self-evident and palpably to the advantage of all the men in the brigade. The document that you have before you shows that clearly. What I stated was that it was as regards the men who were in the brigade, a commutation of a sum of money which belonged to the men into an annuity for their lives, and that annuity much more than the sum they had to their credit.

4860. But still the Board were only going to contribute 500 *l.* to it?—The more you look into it the more you will find that 500 *l.* will not meet the contribution to that fund after a time.

4861. But that was all that was provided; the Board were going to provide 500 *l.*, and notwithstanding that the Board were so liberal, that is all the Board were to provide?—You must remember that the instructions to the committee were to prepare a scheme based upon the contribution of the men. When the report was brought up, we knew it would cost more than the contributions of the men would be sufficient to meet, and, therefore, I, in my capacity as vice chairman, put the motion upon the paper asking the Board to contribute 500 *l.* to the scheme. We could not report upon it ourselves, because it was out of the reference.

4862. It was perfectly evident that you could not base it upon a scheme founded upon the men's own money?—No, not at all.

4863. But still that was the basis upon which the first scheme by Mr. Thompson was proposed, was it not?—No, it was not. I have not in my mind very accurately the details of Mr. Thompson's scheme, but still I do not think it was.

4864. But the report of the accountant says that it was based upon the men's own contributions?—Nominally it was based upon the men's own contributions.

4865. Therefore, you cannot be surprised that the men at once indignantly rejected the scheme?—I cannot say anything further on that point.

4866. I take it that nothing was completed from November 1875 to March 1876?—No, it was not. As I said, the matter was waiting over, and I should say, in justice to Mr. Thompson, the Chairman of the Fire Brigade Committee, that he was at me every fortnight because I did not summon the sub-committee upon this question; but it was not summoned because neither Mr. Newton nor Mr. Lloyd was able to attend. Then Mr. Newton died, and Mr. Lloyd was still not able to come; and then the meeting having been called, I told the committee that as it was hardly desirable that the meeting should meet without anything before it; I had prepared a scheme, but I had the advantage of all the schemes which had been prepared before, and of the objections which had been made, and I went into them very carefully with the accountant before I submitted my scheme; therefore it was very natural that it should be a more successful scheme than those which had preceded it. I attach no importance to my own judgment.

4867 The fact is, that between the 22nd of March and the 27th of March this scheme was adopted?—Yes.

4868. And this Fire Brigade Committee was appointed by the House upon the 21st of March?—I cannot say upon what day it was.

4869. At any rate the consideration of your scheme began upon the 22nd of March?—Yes.

4870. The notice of this Committee, which was given upon the 22nd of February, was agreed to upon the 21st of March, so that it is only reasonable to suppose that the appointment of this Committee might have accelerated the

Mr. *G. B. Richardson.* 19 June 1876.

consideration of the scheme?—I do not think that conclusion can be assented to. I cannot admit it directly or indirectly.

4871. The dates look as if they corresponded somewhat?—They do correspond.

4872. You stated, I think, that Captain Shaw offered no suggestion with regard to this scheme when he was present?—He was present during the whole of the time that the committee sat considering the scheme which I had initiated; he was summoned to be present, and the only suggestion that he offered was to show this scheme and submit it to the men, but this was disapproved of; he offered no suggestions during the whole time as to the consideration of the scheme.

4873. He did not speak of the particular clause, No. 4, in any way, looking at it in the same way as I am looking at it?—No, not a word was said upon it. The draft of it was in print, and he had a copy of it in print before him, and he was present, and heard every proposal made to vary it as we proceeded.

4874. I understood you to state that you were not present yourself?—Yes, I was. I presided over that and nearly every meeting of that committee.

4875. Referring to the inalienability of this pension, you would strictly disapprove, if a man should remain after the maximum time he was required to serve to earn his pension, of his pension being one that could not be taken from him?—I do not know quite whether that was the way in which it was presented to me by the questions put.

4876. Suppose, for instance, a scheme were drawn up in which a man could attain a maximum pension, and take his pension with him at 30 years, and suppose he chose to remain longer, then, I understand, the difference between you and Captain Shaw in the matter to be, that Captain Shaw says the man should be entitled to take away his pension, even although he does commit some amount of misconduct, whereas you say if he commits some amount of misconduct it should be a matter for the Board to consider whether the pension should be given to him or not?—I have said so distinctly.

4877. What, in your opinion, would be the consideration which would induce a man to remain after he had reached the time when he became entitled to his superannuation?—The difference between the amount of the superannuation and the amount of pay which he would receive as an able member of the force.

4878. Do you think that a man who had remained 30 years in the service would be likely to misconduct himself after a time, simply because, in your words, he might be in a position to "snap his fingers at the Board"?—I should not think that any man who had given a faithful and useful service to the Board could by any possibility misconduct himself after that time in that way.

4879. But that is the very reason you gave for not making this pension inalienable?—I did not use the argument; the argument was used against me. I supposed that it was hardly possible that such could occur, but I said if it did occur, leave the man to the tender mercies of the Board.

4880. In answer to Question 4548, in the latter part of the answer, you say, "That is the point that Captain Shaw was dealing with. He was suggesting that whilst a man is in the brigade he should have an inalienable right to pension because he had been a certain number of years in the brigade, and that, therefore, a man might misconduct himself however much, or almost to any extent, and you could not alienate that annuity from him, and he might almost snap his fingers at you, and send in his resignation and claim his annuity"?—That is a possibility.

4881. That, as I understand, is the reason of all reasons why you would say that the men should not have a right to an inalienable pension?—I should say distinctly that I do not think any officer of the brigade ought ever to be in a position where he could have a positive and distinct right to a retiring salary before leaving the brigade, because if he misconducted himself, as he might possibly do, I do not mean to say that it is at all probable that he would do so, but I say that if he did do so, the Board would be unable to punish him as he deserved.

4882. Mr. *John Hardy.*] There is one point which has not been raised with regard to these hydrants, you have said that it is not worth while, under the existing circumstance of London, to place hydrants, nor unless you could ensure such

such a constant pressure of water that you could effect a large saving in engines. I wish to know whether you have gone at all into the proportion that the engines bear to property and population in towns in which they have this abundant pressure?—No, I have not.

4883. Because I have a Paper which shows that in London there are 114 engines, and 3,500,000 inhabitants, which amounts to one engine for about 28,000 people, and that in Manchester they have eight engines to a population of 370,000 people, which amounts to one engine to every 46,000 people, or about two engines in Manchester to three in London, with their very high pressure?—Manchester is about one-tenth of the metropolis, as nearly as possible, in population, and it is one-twelfth of the assessment value of London.

4884. You get a considerable gain in Manchester; you get two engines to three in London?—Quite so.

4885. At Liverpool there appear to be 18 engines to 516,000 population, or exactly the same proportion as in London?—Manchester proper is combined with Salford, and is all covered by the fire-brigade arrangements; and the same is the case in Liverpool, because Liverpool goes far outside Liverpool proper, and deals with many places external to it, whereas we have a very special limit.

4886. What I wish to get at is this; that in 1866 it appears with regard to these hydrants, which you say it is not worth putting down unless you have a constant supply, Captain Shaw recommended the constant pressure system?—Yes.

4887. In 1871 Parliament passed an Act of Parliament, and Clause 8 of the Metropolis Water Act of 1871 provides, that "at any time after the expiration of six months from the passing of this Act the metropolitan authorities shall, whenever they are of opinion that there should be in any district a constant supply, make application to the company within the water limits in which such district is situate, requiring a constant supply in such district." And beyond that, the Act goes on to say, "that the company shall not be compelled to give a constant supply unless the fittings are put in proper order," and then it provides that "in any district in which any default in respect of the prescribed fittings shall be found, the metropolitan authority may" require the owner or occupier to provide proper fittings. Is it not also true that where companies have applied to you to force people to put their fittings in proper order, you have declined to do so?—Yes.

4888. Under those circumstances does it not appear that the Metropolitan Board of Works is indisposed to assist the companies to do anything for the extinction of fires so long as the supply of water is in the hands of the companies?—Then I must give you the reasons why the Board have come to that conclusion, and it is this very mainly, that the Legislature has clogged that power which is given to the Metropolitan Board of Works to require these water companies to give a constant supply, with certain other clauses in the same Act which require every householder in the metropolis to incur an enormous expense in altering the fittings for that constant supply. The Metropolitan Board of Works is a representative body; it represents the ratepayers of the metropolis. We had before us information which led us to the conclusion that if we as a public Board were to call upon the water companies to give a constant supply, it would necessitate an expenditure by the owners and occupiers of private houses in the metropolis of pretty nearly two millions of money in repairing their water fittings, and when you bear in mind that these water companies are only joint-stock companies acting in the interest of their shareholders, it does seem unreasonable that a representative body like the Metropolitan Board of Works should solely, in the interest of those respective water companies, require the tenants of houses throughout the metropolis to incur the expense which is represented to them as being equivalent to something like two million of money.

4889. Is it not a matter of fact with regard to these regulations, that they are not regulations of the companies, but regulations settled by arbitration before Parliament?—With the interest of the Board against them, and using all their interest to get these regulations modified in every possible way, in which the Board failed, and therefore all the legislation on that point has gone in favour of the water companies as against the ratepayers of the metropolis.

4890. Is it not the fact that those regulations were very materially modified by that inquiry?—They were materially modified by the intervention of the

Mr. *G. B. Richardson.*

19 June 1876.

Metropolitan Board of Works, but not sufficiently to meet the requirements of the Metropolitan Board of Works.

4891. Does not it come to this: that the Metropolitan Board of Works think themselves justified, with regard to hydrants, in disregarding the opinion of every Committee and Royal Commission which has been sitting upon this subject, and also with regard to constant supply, of every inquiry which has been held with regard to proper fittings?—I cannot accept it in that point of view; the Metropolitan Board of Works see that if they compel the adoption of constant supply, there will be a very large expense necessary, and that if the joint-stock water companies are to give a constant supply, and they are to put up hydrants, there will be another million of expenditure.

4892. Mr. *Hankey.*] That is entirely at variance with the evidence which has been given before us?—But, take it at a million, although it has been stated at a million and a half, it is a serious question whether you should put the owners of property to the expense of a million and a half for fittings, and another million for the cost of hydrants.

4893. Mr. *John Hardy.*] However that may be, you have taken no steps to carry out the Act of Parliament, either in respect of hydrants or otherwise?—Simply because we found it so clogged by the Legislature with other requirements, that the Metropolitan Board of Works, as a representative body, did not feel themselves called upon to put the Act in force; and further than that, because the water companies can do it themselves without the interference of the Board; and further than that, Her Majesty's Government can do it also without the interference of the Metropolitan Board of Works.

4894. In fact, that the odium to be thrown should be cast upon somebody other than the Metropolitan Board of Works?—Certainly, that is just the question. There must be an odium, and why should we, the Metropolitan Board of Works, throw the expense upon the ratepayers, and bear the odium ourselves.

Thursday, 22nd June 1876.

MEMBERS PRESENT:

Mr. Clifton.	Sir James Hogg.
Mr. Forsyth.	Sir Andrew Lusk.
Mr. Hankey.	Mr. M'Lagan.
Mr. Hardcastle.	Mr. Onslow.
Mr. John Stewart Hardy.	Sir Henry Peek.
Mr. Hayter.	Mr. Ritchie.

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

Mr. *Guildford Barker Richardson*, called in; and further Examined.

Mr. *G. B. Richardson.*

22 June 1876.

4895. *Chairman.*] I BELIEVE you are anxious to make some additions to one or two of the statements that you placed before the Committee at our last meeting; will you refer me to the particular questions to which you wish to make those additions?—I will ask you first of all to refer to Question 4661. It is a statement that was made in the question rather by yourself, than in my answer. You mentioned the case of the judgment that was given by the Lord Chief Baron upon the question of the power of a brigade to claim the expenses which they had incurred at a fire the property of which was insured by an insurance company, and you put it to me that for the reasons stated in the judgment, first, that there was no common law liability resting upon the company to meet such a claim; and secondly, that there was no express contract existing between the parties, the claim could not be substantiated. I wish to draw the attention of the Committee to the fact that that only goes so far as this, that there being no common law liability on the one side, that is to say, on the part of the insurance company to meet such a claim, they successfully resisted it. But if we take the reverse side of the matter, and consider that there was also no common law liability upon the fire brigade to attend that fire, I think we see a little more to what extent that really will go. There was no absolute common law requirement on the part of the brigade to attend that fire, whereas in the metropolis we have this great difference in that respect, that there is a common law requirement on the part of the brigade to attend every fire. We dare not refuse to attend a fire, and in consequence of that the Legislature gives to us, the fire brigade, the common law right to demand a contribution from the insurance company.

4896. Is this your own evidence. What I understood the question to refer to before, was a judgment by the Lord Chief Baron and other judges, that as the local authority had power to levy a rate generally through their locality for the purpose of extinguishing fire, and providing material for that purpose, they were debarred from making a special claim upon any particular section of these ratepayers, such as an insurance company. I understand you to dispute that fact?—Not in the form in which you put it.

4897. But is not that the form in which it was presented and intimated by the court?—I think not; the point is this, that we in the metropolis are required by statute to attend every fire, and in consideration of that requirement so laid upon us in the metropolis, the statute also requires the insurance companies to pay to the Metropolitan Board of Works a certain sum, which is an equivalent of the expenses of the fire brigade attending those fires.

4898. We quite admitted the other day that where a special Act existed under which conditions were made, such as are made in the Metropolitan Fire Brigade Act, this judgment did not apply, but that in the general position of the question

Mr. *G. B. Richardson.*

22 June 1876.

in the country it did apply, because the obligation lay upon the local authority, if they charged a rate for the extinguishing of fires to bring their appliances to bear upon all fires, and not to charge any particular ratepayer an additional sum for that protection?—But I find, by an inquiry which I have made since I was last here, that the insurance offices do recognise that principle whether there is a statutory requirement or not.

4899. The case has been decided by a court of law; if the insurance companies chose to resist that judgment they could resist it?—But they do not resist it.

4900. It is a voluntary act upon their part?—Clearly it is a voluntary act on their part, but it establishes the point which I was raising, that in increasing the expenditure of the fire brigade of the metropolis, it would be right and equitable that the insurance companies of the metropolis should also be called upon to contribute in proportion to the increased amount of expenditure which is to take place.

4901. Only if you could show the insurance companies that the benefits which applied to them, when they agreed to the first contribution, would equally apply to the present case. They must be consenting parties to the matter; you could not under any other circumstances place an increased contribution upon them?—Under the old system they were paying 25,000 *l.* a year for the fire brigade.

4902. That had nothing to do with it; it was a voluntary transaction, and their entering into a contract at the time of the transfer of the fire brigade to the Metropolitan Board of Works was a voluntary transaction also; and at present, I think, the Committee will agree with me that there would be no obligation upon the insurance companies to contribute anything further; however we need not go into this matter, because it does not further the question before the Committee?—Then the next point I wish to refer to is as to what was said with regard to fire hydrants in the City; at Question 4717 you asked me whether or not I was acquainted with the facts of what had taken place with regard to the intention of the Corporation of the City of London to supply fire hydrants. I hold in my hand the conditions which the Corporation have issued with respect to the tenders which are to be sent in for these fire hydrants.

4903. Is this a correction of your evidence?—No; it is rather additional evidence.

4904. I think we have closed the evidence-in-chief?—You will be able to get the matter from the City authorities if you require to have it. Then the third point to which I was asked to refer is, that which relates to a statement in No. 4731, which was a question put by the honourable Chairman, which states that, "by the terms of the report of that committee, and when the Metropolitan Board of Works, through their solicitor, accepted that position, for I was a member and remember the facts, that the responsibility, if that clause were introduced, would fall upon the Metropolitan Board of Works to carry it out; why have you not, since 1871, accepted the responsibility and carried it out"? I do not know whether I am entitled, after what you have said, to make any explanation of that question.

4905. Is it a correction of the answer that you wish to make?—No, rather of the statement in the question. The solicitor to the Board demurs to the statement there, that he in any way pledged the Board to that effect.

4906. I think the word "solicitor" there is perhaps incorrect. I think the learned counsel who argued the case for the Board took that view?—I should almost demur to have that taken as an accurate statement.

4907. Do the Board demur to the fact that their counsel stated, in the course of his speech, the following words. After stating, "no doubt Mr. Bateman and others described the plug as a thing which is behind the age, and altogether a disgrace to the metropolis, as a substitute for hydrants. To that, of course, we do not object; but it has also been urged against us that we have not put them down. The ready answer to that is, that we have not known where to put them down, because the mains have not been charged. So soon as this Bill becomes an Act, and comes into operation after an appointed time, we will have a right to assume that every pipe, I use the word in the largest sense, whether a main or service, will be fully charged, and then it will be for us to discharge the duty which is imposed upon us by the Fire Brigade Act, Section 32, having greater

greater facilities for so doing by the proposed alteration of hydrants for plugs"?—Those were the words reported as being used by Mr. Round upon that occasion; still, they will hardly bear quite the interpretation that you have placed upon them.

4908. The object of the committee being to apply those greater facilities for the extinction of fires?—The object of that particular proceeding, which was commenced by Mr. Cawley, was for the purpose of giving the Board the power to enforce the use of hydrants, which they had not the power of doing before, having only the word "plug" in the statute; and what Mr. Round meant by stating there, "to that, of course, we do not object," was, of course, as a public body, to the insertion of words to show that a "plug" meant a "hydrant."

4909. You cannot say what Mr. Round meant at the time, because I might just as well assert that I knew what the committee meant?—Then I may say that neither Mr. Round nor the solicitor had the power to pledge the Board to any particular course, other than the course they were instructed to; and the instructions given to them would show that certainly the views of the Board were in distinct opposition to anything that was suggested as being meant by these particular words.

4910. You will remember that, the country being dissatisfied with the facilities that were then given, and the means that were taken for extinguishing fire, the Metropolitan Board were entrusted with the power to carry out those additional facilities?—The question is whether, from those words which were used, the Metropolitan Board of Works were pledged to the use of "hydrants" without first entering into the questions whether they would be useful to the metropolis, considering the expense that would be incurred.

4911. Mr. *Ritchie.*] You stated, in the last answer which you gave to me at Question 4881, that although you do not think it probable that a man who had an inalienable right to a pension would misbehave himself, yet still, if he did, the mere fact of his pension being inalienable would prevent the Board having any power to punish him, and that that was one of the reasons why you objected to an inalienable pension?—Yes.

4912. But you stated previously that, in your opinion, the reason why a man would remain in the brigade would be, because he would get a higher rate of wages than the amount of pension which he would have if he left the brigade?—Yes.

4913. Would not his dismissal, in the case of misconduct, so far punish him that he would lose that difference of wages which he would remain in the brigade in order to get?—Yes, it would, to that extent.

4914. To that extent, therefore, it would be a punishment?—Yes, it would.

4915. The difference in wages being the only inducement he had to remain?—Yes.

4916. So that the Board would have some power of punishing the man in that way?—They would have some power at least.

4917. Do you think it desirable that men who have been some years in the brigade should be induced to remain if capable of performing their duties?—Yes. I have always thought that it would be desirable to induce every useful man who had been a certain number of years in the brigade, and who was assumed to be efficient to remain.

4918. And that would clearly in addition to his usefulness be in a pecuniary point of view a gain to the Board, in fact a considerable pecuniary gain to the Board, because the Board would not have to pay him his pension as long as he remained in the brigade?—That must be so seeing that if he went away, of course he would take his pension with him, and could take other employ, assuming that he went away with a good character.

4919. So that, as far as the Board is concerned, it is to the interest of the Board in respect of the usefulness of the man that he should remain; and secondly, to the interest of the Board that he should remain from a pecuniary point of view?—Undoubtedly.

4920. Do not you think, after having attained to the time when he had become entitled to this pension, that if it were in the power of the Board to take it away from him, by his remaining in the brigade and subsequently possibly misconducting

Mr. *G. B. Richardson.*

22 June 1876.

ducting himself, that would be a considerable inducement for him not to remain? —I cannot see it in that point of view, excepting we were supposed to be dealing with a man of a very fickle and uncertain character who had no confidence in himself, and who thought that he might break out any day into some extraordinary course of conduct. If the man had been 25 or 30 years in the brigade, and had been rendering faithful service, it is difficult to suppose that he could suddenly break out into something contrary to all his past life and service, and subject himself to the loss of his pension; but it is just possible, of course, that a man might do so. If I understand your question, you ask me if that simple possibility which may take place would not induce the men to leave the service. I should say in answer to that question that I cannot consider it would.

4921. Allow me to put it in this way. Would it not be an inducement for a man to remain, if he knew he could not lose his pension?—Upon that I will admit to you that if a man has arrived at the term of years when he is entitled to his full superannuation, for that man to continue in the service of the brigade there is no further motive than the full pay of the service: and, as I mentioned in answer to a question which the honourable Chairman put to me, he has also an inducement to leave in this way, that if he leaves, and can get other employment, he can take his superannuation with him, and will also have the pay for the employment upon which he enters.

4922. Is not that an argument against the position you took up. If he has an inducement to leave already, why should you increase that inducement by making the pension which he has earned by his service dependent upon his conduct or misconduct during his still further remaining in the service?—I think we take a tangible position in this way: Say there is a man who has been with us a certain number of years, having rendered a faithful service, and being now entitled to his superannuation; he can go any day he likes, having completed that term, and we cannot help ourselves. We have bound ourselves by the contract existing between the two parties, and we must give it him; still we do not want the man to go. The position is perfectly mutual between us; he can go if he likes, and we cannot compel him to stay. If he goes he exercises his own choice, and if he remains he equally exercises his own choice.

4923. This is an important point, which I should like you to answer as shortly as you can, because we may go on arguing backwards and forwards for a long time. You admit that if a man had an inalienable right to a pension it would be an inducement for him to remain?—I do not think I have said as much as that. I only said that if a man had an inalienable right to a pension, if he misconducted himself the Board would have, comparatively speaking, but little control over him.

4924. I think you went further than that, but I do not think I need pursue that matter any further. The position which you take up is, that a man ought to trust to the liberality of the Board?—That any man who misconducts himself after he has served the term which entitles him to superannuation, must, I think, rest upon the Board for the consideration of the matter after he has misconducted himself. That is all I say, and I think I am right in saying that that is the custom with all governing bodies who have a large number of men under them.

4925. Every year the constitution of your committee changes, does it not?—Every year the committee is re-appointed.

4926. So thatwhat might one year be a liberal committee, might the next year be the reverse?—Practically there is very little change, except by death, because the members of the committee one year are usually re-appointed.

4927. But, being a changing body, it is natural that a man cannot have the same confidence in a committee which is liable to change like that as he could have in one permanent head who had to decide these matters?—I quite agree, except that I think this should be added as an answer to your question, that a man who misconducts himself (we start with that basis) is not entitled to have any confidence in anybody. If he does misconduct himself, there is a failure; a laches on his part. We do not want to consider the circumstances of a man who misconducts himself; the moment he misconducts himself he is, to a certain extent, outside.

4928. But there is misconduct and misconduct, of course?—Yes, there is, of course.

4929. Then, again, with regard to the liberality of the Board, that depends upon the vote which may be taken at the committee?—Yes, the Fire Brigade Committee have to consider the matter first; they bring up their recommendation to the Board, and the Board would approve of or reject it, as the case might be.

4930. As one instance of the precarious nature of the decisions by the Board, you spoke of the pay of the men having been raised at one time; do you know by what majority that pay was raised?—I have forgotten it at this moment, but I do not think that it was a very large majority; I know there was a good deal of opposition to it at the time.

4931. Mr. *Onslow.*] You stated that you had personal knowledge of the working of the fire brigade in Liverpool?—Only from the visit which we paid there. We were only in Liverpool, I think, for four hours examining the operations of the fire brigade.

4932. Over the whole of Liverpool there is the high-pressure system, with hydrants with a pressure of 55 lbs., is there not?—I think that that is the Manchester pressure. I was speaking more of Manchester than of Liverpool in mentioning that pressure.

4933. Do you know what the pressure upon the hydrants at Liverpool is?—I think, if I mistake not, it is more than 55 lbs. I think what we witnessed must have been more than 55 lbs., because we witnessed six jets; one of them 2 inches, and the others $1\frac{3}{4}$ inches, and the jets of the water were discharged to the tops of the highest warehouses in the busy parts of Liverpool; they must have been at least 100 feet high, and the water reached quite to the tops of the buildings, and therefore it must have been 100 feet rise from the ground level.

4934. I understand you to say that, out of 300 fires, only nine fires were attended by steam fire-engines?—That was in Manchester.

4935. I see in this book, entitled, "Notes relating to the Water Supply and Fire Extinguishing Service of Manchester and Liverpool," that in Liverpool the cost of the fire brigade is only 4,737 *l.*?—This is the information which we received from the authorities of the borough of Liverpool as the expenses of the fire brigade, 4,737 *l.* 8 *s.* 6 *d.*

4936. It is stated in this book that the population of Liverpool, in round numbers, is 516,000?—It is.

4937. And the population of London, in round numbers, is 3,000,000?—Yes, 3,250,000 it may be called, in round numbers.

4938. Taking the population of Liverpool at 516,000, and the population of London at 3,200,000, in round numbers, the population of Liverpool is one-sixth of the population of London?—Yes.

4939. If we had the same appliances in London as they have in Liverpool, multiplying the 4,737 *l.* by six, that would give the total cost of the fire brigade in London, in round numbers, at 28,000 *l.*?—Yes, that would be the calculation from those figures, as they stand.

4940. The cost of your fire brigade now, for the year 1876, according to the estimates, is 77,000 *l.*, in round numbers, is it not?—It is.

4941. Therefore, all things being equal, do you think it is a fair calculation to deduct that 28,000 *l.* from the 77,000 *l.*, the present sum expended upon the London Fire Brigade, which would leave a difference of 49,000 *l.* in favour of Liverpool?—I do not think that you have the whole of the cost of the fire brigade of Liverpool stated here. The first statement in this paper, at page 27, is "Extra wages and clothing to firemen." They are most of them members of the police force, and their pay is included in that of the police force, therefore you cannot put down the 4,737 *l.*, the cost of the fire brigade in Liverpool, as having any parity to the cost of the fire brigade in London.

4942. But I am supposing the system in London to be the same as the system in Liverpool; I am only talking of the actual expenses of what they call the fire brigade?—Assume that it was the same in London as it is in Liverpool, whatever you took off from the London Fire Brigade establishment to add to the police, would be so much additional expenditure to the metropolitan police.

Mr. *G. B. Richardson.*

22 June 1876.

4943. Are you aware how much extra is charged to the police on account of fire brigade duty?—We have no more knowledge of what is done in Liverpool than is stated in this document, but I think it would mislead you entirely if you were to attempt to make any comparison between those figures and the cost of the Metropolitan Fire Brigade. I do not think you can draw any parity between the two at all.

4944. But at all events, taking my figures, there is a difference in favour of Liverpool of 49,000 *l.*, and I think I understood you to state that your estimate for laying down hydrants all over London was 750,000 *l.*?—We have estimated the probable cost at that sum, but it is a very arbitrary estimate, and you must not take what I say upon that point as being of any value. It is an engineering matter entirely, and I cannot give you any trustworthy information upon that point myself.

4945. At what rate would you be able to borrow that money?—We should hope to be able to borrow it at 3½ per cent.; we have done so just recently; it it a very easy calculation. A million of money costs the Board as nearly as possible 50,000 *l.* a year; that is to say, 35,000 *l.* for interest, and the redemption of capital would be about 20,000 *l.* more.

4946. Then the annual cost for 750,000 *l.* would be about 37,000 *l.*?—Yes.

4947. And according to the figures which I put before you there would be a saving of 49,000 *l.*; deduct the 37,000 *l.* from that, and there would be a saving of 12,000 *l.* Now, is it your opinion that the cost of a fire police, the same as they have in Liverpool, if adopted in London, would cost as much as 12,000 *l.*?—I have not given that subject any consideration myself, because it has never occurred to my mind, but I do not think that by any possibility you could very largely reduce the cost of the fire brigade of the metropolis, whether it be in the hands of the police, or whether it be in the hands of the Metropolitan Board of Works, or any other body; its cost I take it would remain the same, as I think is almost self-evident from the annual returns. If you have this document of our expenditure for the year before you (*handing the same to the honourable Member*) you will see what the expenses arise from; the salaries and wages amount to 37,800 *l.*; you cannot reduce that.

4948. But I am speaking of the universal use of hydrants?—But the men will be the same; you must have your men, and if you look through this estimate of expenditure you cannot reduce it very much; you cannot reduce the salaries and wages; you cannot reduce the expense of clothing, and you cannot reduce the medical expenses, nor the expense of pensions.

4949. But if you had a universal system of hydrants you would not need so many stations, and, therefore, you would not need so many men; is not that so?—I think if you had a universal system of hydrants, with the full pressure of water, your principal saving would be in the horse hire, and some of the other incidental expenses at fires, which occur now somewhat largely, and in that paper which we put in, we estimated that there would be a reduction of 4,000 *l.* or 5,000 *l.* a year if we had those hydrants with sufficient pressure.

4950. But I see that in Liverpool, which has a population of 516,000, they have only three steam engines?—They have only three steam engines at Liverpool.

4951. And about a dozen manuals?—I am speaking from memory; but I do not think the district which the fire brigade covers means the whole of Liverpool; Liverpool is a very large place with its suburban districts.

4952. It is an area of eight one-seventh square miles, is it not?—Yes.

4953. Five thousand one hundred and two acres?—Yes; whereas we have an area of 117 square miles in the metropolis.

4954. But do not you think that if you had a system of hydrants all over London, you could materially reduce the number of steam engines?—I think if we had, as I said before, a perfect system of hydrants, with a proper pressure, there would be a very material saving in the fire brigade expenditure sooner or later; it would be gradual, of course, but a certain considerable sum of money could be saved, I think. However we have not that pressure; that is a question which we have had to consider, and until we have that pressure I am afraid that we shall be able to make but very little use of hydrants.

4955. You have never made a calculation of how much that saving would be?—

be?—The only estimate was in that document which has been printed and put in, which principally applied to horse hire, the statement being that it would be 3,000 *l.* or 4,000 *l.* a year less.

4956. Did you hear Mr. Freeman's evidence with reference to the employment of sailors in the fire brigade?—I have read the evidence, but I was not present when Mr. Freeman was giving the whole of his evidence.

4957. Do you agree with him generally, that other athletic men than sailors might be employed as members of the fire brigade?—I have thought so; I am not a member of the Fire Brigade Committee, and have not devoted myself much to that particular question, but I should have thought that there were other employments than that of sailors which would provide a class of men useful for the fire brigade; and indeed, when we consider what the class of sailors are, how fickle and changeable in their views of things, I should have thought that the employment of other men would indeed be desirable.

4958. Has it ever been brought to the notice of Captain Shaw that it would be beneficial to employ men other than sailors?—It is only very lately that I have heard it stated at the Board that there has been any deficiency of men; we have generally been full, and more than full; but just within the last three months there has been a difficulty in filling up the brigade; it has amounted, however, to a very small thing; I do not think the brigade has been more than half a dozen behind; seven or eight it may have been, but I do not know the details exactly.

4959. Are you of opinion that the age of 25 is the best age to take men into the brigade?—I put down my calculations at 23; I took it from the evidence of Captain Shaw; some of the men joining the brigade at the age of 18 or 19, and some as high as 30; therefore I take it as an average of 23; and I think, from what I have read, that 23 is about the average age at which men enter the brigade.

4960. Sir *Henry Peek.*] You have expressed yourself in favour of exacting an increased contribution from the insurance companies?—I have, as their fair quota in proportion to that which is raised by the public rates.

4961. You disagree probably with Mr. Freeman, who thinks it is the duty of the municipality to take charge of fires and not of any independent body?—I do not disagree upon the abstract question, that it is the duty of the municipality to take charge of fires, but it is a separate and distinct question whether, when the municipality takes charge of fires, it should or should not be supplemented by insurance offices in part of the cost.

4962. Why should the insurance offices pay anything?—Because they are, strictly speaking, the owners of the property, *quoad* fires; if you will think the question out (I have done so), I think you can come to no other conclusion but this, that an insurance office is no other than the owner of the property; it is exactly and precisely the same as the owners of the property, *quoad* the contingency of fires; it is a rather long question to go into, but I could illustrate it to you in many ways if you wished it.

4963. Do not you think that prudent people who insure their property, and at the same time have to pay part of the halfpenny rate, are taxed double for their prudence; they have to pay their insurance premium, and also their full share of the halfpenny rate?—I look at it in this way; that the cost of insurance is one thing, and the cost of preventing casualties by fire from being greater than they otherwise would be, which is the great object of a fire brigade, is another, but both of them, the one and the other, are evidently and cannot be anything else than so many charges which properly fall upon the owners of insurable property. If then the owner of insurable property goes to an insurance office and says, I am not going to be my own underwriter; I look to you to be my underwriter, and to be my representative, and bear all these contingencies; and because you do so, I will pay you a certain sum of money, that does not in any way relieve the property or the owner of the property from the liability and burden which rests upon him of meeting the cost of the fire brigade, which is directly in the interest of the owner, for the purpose of preventing the casualty of fire from being larger than it otherwise would be. The consequence of it is, that an insurance office, paying a contribution to the fire brigade, is nothing more or less than the owner paying it. There is no individuality in the fire insurance office

Mr. *G. B. Richardson.*

22 June 1876.

apart from the owner of the property which is insured in that office; you cannot separate the two; they are one and the same person.

4964. Captain Shaw told the Committee, and we have heard from other witnesses that, speaking broadly, only about one-third of the insurable property in this metropolis is insured, consequently one man who does insure and who is prudent, pays two taxes, whereas the other man, who does not insure and may be said to be imprudent, only pays one; is not that so?—Quite so; but still that leads you away from the true basis of the question upon which you can arrive at a correct conclusion. Granted this, that all property within the metropolis liable to the contingency of fire is benefited by the fire brigade, then all the property in the metropolis which is insurable ought to bear the cost of that fire brigade. Then comes the question, how are you to make it pay; the insurance offices represent a very large portion of that property, and you call upon them to pay their quota; but there is a large portion of property which is uninsured; you cannot get it from the owners of that uninsured property; you can only get it in that unsatisfactory way which is called a rate. Here are two shops, one a baker's and the next a jeweller's, both assessed at the same value upon the rates; the one will contain, say 300 *l.* of insurable property, the other 10,000 *l.*; both houses will pay exactly the same to the fire brigade rate, although in one house there is 10,000 *l.* of property which is being protected by the fire brigade, whereas in the other there is only 300 *l.* worth; that is not fair. So it is in your large warehouses; in one warehouse you will have silk and other goods to the value of hundreds of thousands of pounds, and in another large warehouse you will have a quantity of jute, which is of comparatively trifling value, both paying the same to the rate, but paying nothing through the insurance office if uninsured; yet their interest in the fire brigade is so different that one ought to pay a very much larger proportion than the other.

4965. Then, carrying out that idea of yours, when the question was put whether, seeing the large quantity of valuable goods which was stored in the immediate neighbourhood of the docks and large warehouses, it was not right that those goods should have much more of the attention of the fire brigade than the more distant parts; Mr. Freeman's answer distinctly was: "No, we take the metropolis as a whole, and we must place our engines, stations, and appliances all over the metropolis, quite irrespective of the value of property altogether;" you would not agree with that proposition?—I should say, in answer to that question, that every part of the metropolis ought to be sufficiently protected, as far as the funds of the Metropolitan Board will allow, and that if it is not sufficiently protected the funds ought to be increased.

4966. Do you think it would be a just thing to have a threefarthing rate instead of the halfpenny rate, and relieve the insurance companies of their quota altogether?—I think it would be exceedingly unfair. I think the only fair way of paying for the fire brigade is to make the owners of property pay, and how can you make the owners of property pay except through the insurance company, which is really the owner of the property, *quoad* fire.

4967. You make a distinction between movable and immovable property?—Not exactly; a brick house, although not movable yet it is insurable property, and represents a value in case of fire.

4968. Two houses out of three in London are insured; if you had a threefarthing rate, the prudent and the imprudent man would be charged alike; that is what, I presume, you would say was fair?—I cannot go with you in that, because I start from a different idea altogether. I say the only fair way of meeting the cost of the fire brigade is to make the owners of property pay it, and the owner of a large property, which is insurable, ought to pay more than the man who has a small quantity only.

4969. You say you would make them pay, but you cannot make them go to an insurance company and insure their property, out of which you get your 35 *l.* per 1,000,000 *l.*?—But the rate makes you pay on the soil, whereas you want to get at the buildings which are upon the ground, and the property which is inside the house. The question is, how much should the owner of that property pay, because there are so many thousands of pounds worth in that property liable to the contingency of fire, and the owner wants it to be protected, therefore he should have to pay upon the value of the property which he requires to be protected; A., if he has a large amount of property, should pay more,

more, and B., if he has a small amount, should pay less. To charge it by the rates is most unsatisfactory.

4970. Has the value of the Government buildings increased lately in the metropolis?—One would suppose it has, from the new buildings that are going forward.

4971. Has their quota at all increased?—No, the Government retain it at their 10,000 *l.*

4972. Although the Government buildings may be twice as valuable now as they were 10 years ago, their quota has not increased?—It has not.

4973. Do not you think it contrary to all principles of sound policy that parties who during the last 11 years have paid 167,000 *l.* against the Board's 426,000 *l.* should be voiceless with reference to the expenditure of so large an amount?—No, that raises exactly the same question as I have raised before, that these insurance offices have no individuality of themselves whatever; they are nothing more nor less than simply the owners of certain property. The real owners of these properties are represented at the Metropolitan Board of Works. I represent those in my district, and other members of the Board represent those in their districts. The insurance companies have taken an assignment of the owners' interest, so to speak, and represent the owners, and are paid a certain sum of money because they take the interest of the owners, and the contingency of the owners, and in no other way can you look at it; any other way than that would give the insurance offices a right to interfere, and an individuality which they do not possess.

4974. In your opinion they ought not to have any more representation than they have at present?—They cannot have any more than the owner has; the owner is represented, and therefore they cannot have any more than that.

4975. Does the Metropolitan Board of Works pay any part of the expenses of the salvage corps?—No.

4976. Therefore the expense of that falls upon insurance companies?—Entirely, because that corps is for the purpose of preventing as large an amount of property from being burnt as possible.

4977. But I think we were told that the salvage corps men were expected to lend a hand to the extinction of fires, and do so?—I do not think I said so, but you may take it in this point of view; the duty of the fire brigade is to extinguish fires, and the duty of the salvage corps is to prevent property from being burnt; if there is a house on fire into which the salvage corps men can enter, their duty is to get out the property and save it. Assume that a house is in a state in which it is impossible for anybody to get inside, and the salvage men are there to watch the property; then they are in a position to assist Captain Shaw; but their primary duty is to get as much property out of that house and save as much as possible.

4978. Now going to another point, you quite agree with Mr. Freeman that the hours of the men's duty are too long?—That will not quite convey I think what I said or what Mr. Freeman said. What I endeavoured to convey in my evidence was that these men when they are off duty were so confined to their respective stations that although they were doing nothing they were not able to go away, but were obliged in the words which are used again and again to remain "waiting a fire."

4979. You think that some addition to the number of men must certainly be made?—I think that some addition to the number of men should be made in order to give that additional leave which seems advisable for the men. It is a very trying duty for a body of men to remain for a long time in a place doing nothing, and I must confess I should have liked to have seen some libraries or something of that kind established in those places, so that the men might have something to read. I have been in their places and seen them with nothing to do, which must be very trying to them.

4980. And you also think that some superannuation scheme should be forthwith established?—I quite agree to that.

4981. You do not agree that pensions, no matter how long they had been earned, should be absolutely inalienable?—I do not agree to that.

4982. You are prepared to differ from Captain Shaw in that respect?—I think so.

4983. Do you think, looking at the nature of their duties, that whatever superannuation

Mr. *G. B. Richardson.*

22 June 1876.

superannuation scheme was finally established for the police, would be fair for the fire brigade?—I should not like to give a definite answer to that question.

4984. I think you said you were opposed to a small fire-engine station being established at Shooter's Hill?—I thought that inasmuch as it was almost contigious to Shooter's Hill Police Station, and there was some reason to think that the police station might be made available to assist in the extinction of fire, and considering that looking in one direction from Shooter's Hill you look entirely upon green fields, and only upon houses in one direction, it was desirable to see whether the requirements of the neighbourhood might not be met by a certain amount of fire brigade plant being left at the police station, and the men there being made competent to work it.

4985. I understood your evidence to be that you would have preferred fewer and larger stations with more complete telegraphic communication?—Yes.

4986. And that that was one main reason why you objected to the establishment of a small station at Shooter's Hill?—It would have been a four or five man station, but I may say this, that I am not a member of the Fire Brigade Committee, and the opinions I form are not formed with the same knowledge of details which the members of the Fire Brigade Committee possess, and therefore my opinions must be taken *quantum valeant.*

4987. You thought as I gathered that it would be a great advantage that no wife should be recognised as living at a station who had not some knowledge of the telegraph apparatus?—That was not my suggestion, but I was visiting the station at Blackheath the other day questioning the men, and I asked them whether or not their wives were instructed in the use of the wire, and they seemed to think that it was almost a matter of impossibility that any one of their wives could be allowed to come down into the stations and touch the machines; but I expressed my opinion that if all of them were obliged to be absent by any sudden call it would be a very desirable thing indeed that the women should be instructed, and I referred to the case of the Post Office, and said how easy it was for women to attain a knowledge of the instrument, and that it was very desirable that their wives should be able to work them. That was a suggestion which had not occurred to them before, and when I mentioned it to the men they did not seem to fall in with it, but seemed to think that their wives were to be upstairs and anywhere but in the watch-room, and that the less they interfered the better.

4988. Mr. *Clifton.*] I think you stated in answer to Question 4790, that you thought the men ought to be more concentrated. Might I ask you your reasons for thinking so; is it upon the ground of expense?—There is a very great deal of expense incurred if you go into the question of details before the Fire Brigade Committee owing to the men being scattered all over the metropolis, and it seemed to me that they would be more under the control of the chief of the brigade if they were more centralised, instead of being at the outlying depôts, because we see in the outlying parts that fires are exceedingly few. In my own district which occupies a very large area, out of 35,000 houses there were only four houses on fire from the 1st of January to the 15th of May.

4989. Is it not an advantage for the men to be scattered, because they would be able to get to a fire quicker than they otherwise would?—Quite so; but, on the other hand, if you have a very large fire it takes a very much longer time to bring those men to bear upon the point upon which you wish them to be brought to bear; so that it is a pure question of opinion whether, instead of scattering the men upon the contingency that a fire may occur now and then where they occur very seldom, it is not more desirable to concentrate them; and I think I read in Captain Shaw's evidence that he expressed his opinion to the effect that it was desirable that the men should be concentrated, and I have had conversations with him on more than one occasion, in which he has expressed that opinion to me.

4990. But in the interest of a ratepayer who lives in a somewhat remote district, do not you think it unfair upon him to leave him comparatively unprotected?—I admit that it is difficult for the Metropolitan Board of Works to contend against that. He will come to the Board and say, We contribute to

the

the rates and we ought to have the fire brigade almost brought to our doors, and it is difficult to deal with a question of that kind; but still that does not induce me to vary the opinion I have formed, that it would be more advantageous that the men should be concentrated than that they should be scattered about.

4991. Is not horse hire a very important item in your accounts?—It is very important indeed, and one which it is desirable we should diminish, if possible.

4992. I presume if you had more concentration you would require more horses to move the engines, and that the expense for horse hire would be increased, seeing that the engines would have longer distances to travel?—It is not the distance they travel that they charge for, but for the journey; or rather, the present arrangement is, that a man is paid to keep two or four available horses at each station. It matters not what you do with them, where they go, or how they go; the same money is paid, and those horses are always at our disposal.

4993. How much a year is paid for that?—About 150 *l.* a year for a pair of horses.

4994. Does that include the driver?—The driver is a separate charge, which would be about 50 *l.* a year more; you may put it down roughly at 200 *l.*

4995. Is the driver a fireman?—The driver is not a fireman, but he is dressed very often in fire brigade clothes.

4996. Would it not be of advantage to teach the men to drive, so as to enable them to save the expense of a driver?—That is a point of detail which I would rather leave some other gentleman to answer.

4997. I think you stated, in answer to Question 4782, that the expense of a hydrant, if put up after a main had been laid down, would amount to about 10 *l.* May I ask how you arrive at that sum, because I see by the book which you have handed in that the expense of a hydrant at Manchester is only 2 *l.* 15 *s.*?—That is a very arbitrary sum which one is unable in any detail to confirm; but I was looking over a paper with reference to the detail of what the Corporation of the City of London require for their hydrants. I believe the estimates were sent in yesterday, and I think if any Member of the Committee were to read those documents he would see, instead of the cost being 10 *l.*, it would be considerably more. I have referred to this document, signed by Sir James Hogg and myself, in which we say, "We will endeavour to give a general idea of what the position of things would be in the matter of expenditure. The Board's engineer states, in a report presented to the committee on the 3rd August last, that there are about 1,200 miles" (but I am told that it is considerably more than 1,200) "of roads in the metropolis in which houses have been built. Taking this length, and assuming that hydrants of the kind referred to by the engineer are placed at a distance of 200 feet from each other, the number of hydrants required would be about 32,000. The cost of these hydrants is given at 4 *l.* 14 *s.* each, but this is without stand-posts; with stand-posts and other necessary things, the expense of supervision, &c., the cost would probably be about 9 *l.* each, or 288,000 *l.* Taking the total cost at 300,000 *l.*, this at 4 per cent. would be equivalent to 12,000 *l.* a year. Against this would have to be set off the following: reduction in wear and tear of engines, and in purchase of new engines, about 2,000 *l.*; reduction in quantity of coal and oil consumed about 500 *l.*; reduction in amount paid for horses about 3,000 *l.*, making a total of 5,500 *l.* The matter would then stand thus: annual equivalent of estimated expenditure upon hydrants 12,000 *l.*; estimated annual saving in other branches of expenditure consequent thereon 5,500 *l.*, leaving as the estimated increase in annual expenditure 6,500 *l.*" But then, as I said before, we should have to increase the cost by four times that at least.

4998. But the hydrant used at Manchester is satisfactory?—Yes, they represented it to us as very satisfactory.

4999. Why could you not, therefore, get hydrants placed in London at the same price as they do at Manchester?—I cannot give any answer to that question.

5000. Because they say at Manchester that a hydrant costs, when fixed upon a four-inch main already laid, about 2 *l.* 15 *s.*?—But that does not mean with saddle pieces and all the necessary adjuncts that would be required in the metro-

Mr. *G. B. Richardson.*

22 June 1876.

polis. When a main is already laid, and you have to add a hydrant to it you must do a great deal more than you would do if you were doing it at first starting.

5001. You say that upon a four-inch main already laid and so on, the cost would amount to about 4 *l.* 14 *s.* per hydrant?—In London it is not the Metropolitan Board of Works who have to lay them. It is the water companies who are to lay them down, and the Board to pay them for doing so. We should select what hydrant we wished, and the water companies would fix them, and send the bill in to the Metropolitan Board of Works, and the Metropolitan Board of Works would be called upon to pay, so that we are subject to a certain extent to other bodies than our own, and I think that you will find the cost considerably beyond what you have stated.

5002. But you are in favour of hydrants, are you not?—I am very much in favour of hydrants. My mind could never be more strongly in favour of hydrants than it is, if you will only give us sufficient pressure.

5003. What pressure would you require?—I do not think you could do with much less than 300 feet of pressure, as Captain Shaw stated to the Commitee, but evidence will come from the engineer of the Board, Sir Joseph Bazalgette, upon that question. I am not an engineer, and I think that it would be better that my opinion should not be considered. There is a great deal to be considered. By the friction through the pipe, and the friction in the hose, you lose an immense deal of your pressure before you can deliver your water on a fire, but that Sir Joseph Bazalgette will give you full information upon.

5004. May I ask you whether you consider the danger of the firemen or the danger of the police the greater?—My own opinion is this, that if you were to take 400 men of the police on ordinary duty, and take 400 men of our fire brigade on ordinary duty for six months, you would find very many more casualties in the 400 men of the police than you would in the 400 men of the fire brigade; they would be totally different kinds of casualties; the one would arise from kicking and ill-usage, and the other would arise from accidents at fires, but taking them as a whole I believe the casualties in the police are very much more than in the fire brigade.

5005. I think you stated that you did not see any reason why sailors should be exclusively enlisted in the fire brigade?—I said I did not see myself why there should not be others, but Captain Shaw, who is a better judge than I am, considers that they are very careful, and kind and considerate, and in dealing with women, when they have to take them, as they sometimes do, out of upper windows, you would have perhaps more evils arising from the over zealous exertion of men of other classes than you would from the care which the sailors would take.

5006. Do you think that you could get them at lower wages?—I do not think that it is a question of lower wages; it is a question whether you could find men suitable for the employ.

5007. Do you think the men taken from other employments would stay longer in the brigade, because you stated that sailors were fickle?—Sailors are naturally fickle until they have married and got children; that is the tie which keeps them in the brigade.

5008. Sir *James Hogg.*] You were asked some questions about hydrants in the City, and you were not able to give definite answers?—I was not.

5009. You have informed yourself upon the subject, since the last meeting of the Committee, have you not?—I have; a copy of the tender which has been issued by the corporation has been placed in my hands.

5010. You know the area of the City, do you not?—Yes, it is one square mile.

5011. How many hydrants are proposed to be put down?—Two hundred hydrants are proposed to be put down.

5012. You know the area of the rest of London, do you not?—The area of the rest of London is 117 square miles.

5013. If hydrants were put down every 200 yards, you could give an idea how many would be required?—Taking it in the same parity, it would be 117 times 200. If you put down 200, at our estimate of 10*l.*, that would be a

mere

mere bagatelle, only 2,000*l.*, and if you take it at 5*l.* each, it would only be 1,000*l.*

5014. Is there anything else that you wish to say with regard to that question?—I should wish to read a portion of this document, because I believe some of the Members of the Committee have a very imperfect idea of what a hydrant is expected to do. These are the conditions for making, supplying, and erecting fire hydrants in the City of London; it says: "The hydrants will be of two classes; A. hydrants, which must be provided with an auxiliary valve, or other means of allowing the hydrant valve to be removed for examination and repair, without having to shut off the water supply from the street main; B. hydrant, without such valve for shutting off the supply from the street main during repair. Each kind of hydrant must be adapted either for being placed in posts, to stand up above the level of the public footways, or for being placed in pits or receptacles beneath the footways, having cast-iron or other moveable and convenient covers to protect them; the design of the post, and the brick or other form of pit, must be shown and specified in the design. All hydrants and fittings must be approved by the New River Company. The hydrants must be in every particular constructed of the best materials and workmanship; the faces of all flange joints are to be planed and turned. All valves must be of the best gun metal, with gun metal seatings, properly turned, ground, and faced. All screws not in frequent use must be of gun metal. The spindles and other screws must be of the best wrought iron, accurately turned, screwed, and hushed with gun metal. All valves, chambers and communications are to have a clear water way, equal to at least a circle of three inches in diameter. All valves are to be provided with some means for emptying the hydrants and fittings, so as to prevent injury by frost." "The hydrants and fittings are to be proved to a pressure of 600 feet head of water." That is all the important part of it.

5015. You were asked by one of the honourable Members of the Committee about the Fire Brigade Committee being of a changeable character; do not you think that individuals might change in opinion just as much as committees, supposing the arrangements were under one person?—Yes.

5016. And individual heads may be changed just as much as committees may be changed?—Yes, quite so.

5017. Have you seen the evidence given in 1862 with regard to the representation of the fire insurance companies, especially the evidence given by Mr. Newmarch; Mr. Newmarch was at that time actuary to the Globe Insurance Company?—Yes.

5018. He was an authority upon this matter, was he not?—He was a great authority upon this matter; there was no greater authority.

5019. I will read one of the questions which was put to him by Mr. Vance, No. 4095. "Supposing that a general system of a fire brigade was established for the metropolis, to which the companies would contribute, would the companies make it a stipulation that they should have any control?" to which he replied, "I do not think that they would. (*Q.*) They would be willing to leave the entire control to the police, or any other body which was appointed to manage it? (*A.*) I think so; of course as the fire offices would have to bear their share of the expense of each particular fire, in the event of any gross negligence having occurred at that fire, and the offices suffering in consequence of that negligence, the offices would very likely think it quite within their province, and quite fair that they should make some representation upon the subject; but the offices, so far as I understand their views, would not desire to retain any active share in the management of an efficient municipal corps." Do you agree with that?—I quite agree with that.

5020. I suppose you know that if the fire insurance companies had any objections to make to anything they would be heard by the Fire Brigade Committee of the Metropolitan Board of Works?—Their representations are always most carefully considered by the Board.

5021. The representations of fire insurance offices have been, and are, considered by the Board?—That is so.

5022. I think you might instance that by saying that, with regard to the small river float, everything that the fire insurance companies have suggested has been looked into by that Board?—Yes, that has been so.

5023. And there have been conferences between the representatives of the

Mr. *G. B. Richardson.*

22 June 1876.

fire insurance offices and the Board with regard to that point; have there not?—Quite so.

5024. Some questions have been put to you with regard to a prudent man and an imprudent man, about their respective shares of contribution, and with respect to insurance, that the prudent man would be taxed twice over; is it not the case that if the prudent man pays his tax, and also insures, supposing his house is burnt down, he gets the benefit of it by getting his house back?—Yes, quite so.

5025. That is the way you would answer the questions which have been put to you upon the subject?—Yes, in that way; that the prudent man is rewarded for his prudence by getting his loss made up to him.

5026. In one way, every man ought to bear his fair share of taxation for the contingency of fire?—No doubt.

5027. You were asked some question about the driver being trained as a fireman; would there be much use in doing that, because must not the driver look after his horses?—I should have said that the time of the driver was almost entirely taken up in the care of the horses and the exercise; one man's time is generally said to be fully employed in taking care of a pair of horses.

5028. Then with regard to the question of the horse hire, you are aware, I believe, that the Board have had a very great deal of trouble on that head, and have been endeavouring in every way to reduce the cost of it?—I am quite aware of that.

5029. And you are aware that advertisements have been issued trying in every possible way, in detail and as a whole, to get this work carried out as cheaply as possible with due regard to efficiency?—I believe everything has been done to produce economy in that particular respect, knowing how very large the outlay was, and not only that, but that it was an increasing outlay.

5030. You said something also with regard to the contingent expenses upon fires; that you are aware has been looked into very carefully, and that endeavours have been made to reduce it?—No doubt; these contingent expenses at fires, it is right to say, arise from the employment of members of the public in the working of the engines; every man who is employed is paid 1 *s.*, and it runs up to a good deal of money in the whole.

5031. In fact every effort has been made to combine economy and efficiency in carrying out the duties of the fire brigade?—Yes.

5032. Mr. *Hayter.*] Captain Shaw has the entire charge of the arrangements of the brigade, has he not; with reference to the engagement of the men, for example?—He has entirely so; he submits to the Fire Brigade Committee certain names of persons whom he recommends to be employed, and the Fire Brigade Committee bring them up to the Board, and the Board confirms the appointments.

5033. Captain Shaw selects the men, does he not?—He virtually selects the men, and they are appointed upon his recommendation.

5034. With regard to the repair of engines and hose, can Captain Shaw make the repairs himself?—A certain number of repairs are done under his own immediate order in the workshops which belong to the Board. Any important repair which is needed beyond that which the workshops could provide would be brought before the Fire Brigade Committee and considered, and the Fire Brigade Committee would bring up their recommendations to the Board, and the Board would give an order for the required repairs.

5035. Of course, the purchase of new fire-engines naturally rests with the Board?—The purchase of new fire-engines rests with the Board, but it is only done by the Board upon the recommendation of the Fire Brigade Committee. The Fire Brigade Committee is recommended by Captain Shaw, so that practically it is all initiated by Captain Shaw.

5036. Sir *Andrew Lusk.*] From what you say and what others say, Captain Shaw seems entirely to have the management of all the details?—Yes, of all the details.

5037. And you leave him to fix the number of men, too, do you not?—No; the number of men is entirely subject to the control of the Board.

5038. And

Mr. G. B. Richardson. 22 June 1876.

5038. And with regard to where they are to be placed?—He brings up his recommendation from time to time to the Fire Brigade Committee, and they deal with matters of that kind, not the Board.

5039. If Captain Shaw wants a new engine, what does he do?—He would suggest it to the Fire Brigade Committee, and the Fire Brigade Committee, if they approved of it, would bring up their recommendation to the Board.

5040. Captain Shaw has almost complete control, as I understand, of all the details out of doors?—I think you may, generally speaking, say that he has such an amount of control as it is only reasonable he should have in his position as chief officer of the brigade, and such as is consonant with the fact that the Metropolitan Board of Works is a public body representing the ratepayers, and that it is necessary that they also should have some control. The Board give him as much authority as is necessary for an officer in his position.

5041. From what I have heard it has struck me whether you are the right authority to have the management of the brigade at all, because you seem to leave it entirely in the hands of Captain Shaw; is that your opinion?—I certainly do think we are the proper authority, and upon the very broad and simple ground that, inasmuch as the ratepayer pays for it, that is to say, whether he is the owner or whether you call him a ratepayer, in either position it is the ratepayer of the metropolis who pays for it, and I presume that it is generally admitted in these advanced days that those who pay should have a share in the management and control; therefore I take it, it could not be otherwise than that the Board should be permitted to have the control of the fire brigade.

5042. Everybody does not admit the last proposition you have stated; but you have just stated that Captain Shaw selects his men because they are sailors, and you do not interfere?—No.

5043. Do you do your duty to the public in allowing him to do as he likes in the matter?—I think that if Captain Shaw, who is a very good judge of the kind of man who is suitable for that employment, came to the Fire Brigade Committee and said, I recommend you to employ A, B, C, D, and the committee were to say, No, we will employ E, F, G, and H, that would be very unwise, because the responsibility, to a very great extent, with regard to the men, and their service and instruction, rests upon Captain Shaw, although the ultimate responsibility of their control rests upon the Board.

5044. But the Board are elected to manage the matter, and not Captain Shaw?—Take the case in another point of view. Assume that Colonel Henderson manages the police in the metropolis, and that Colonel Fraser manages the police in the City, I do not suppose that Colonel Fraser or Colonel Henderson absolutely selects the individual men brought into the different brigades of police. I should suppose that it is quite sufficient for them to approve of those whom their officers immediately under them select, and it is the same with us.

5045. The reason I ask this question is, that I have heard so many answers given that the Fire Brigade Committee do not know anything about certain things, because Captain Shaw has the entire charge?—I think the committee know everything about everything about which it is necessary they should know anything. With reference to the particular character of a man who is in the brigade, of course they cannot know that; they are not brought sufficiently into communication with their men; they do not see them sufficiently often. I have no doubt it might be desirable that the men should be more frequently brigaded before the Board so that the men should know their employers better than they do. I do not suppose that there are a dozen of them who know me by sight.

5046. But I suppose the ratepayers consider you their representative, and not Captain Shaw?—But we give that confidence to Captain Shaw, whom we believe to be a good and useful officer, believing that he will use that power which is given to him for the advantage of the public.

5047. You trust most of the details to him, and do not go into them yourselves?—No; I think if you go to the Fire Brigade Committee you will find they know all the details, because they require Captain Shaw to report to them upon everything which takes place.

5048. Do you think from your experience that there is a fair amount of preparation

Mr. *C. B. Richardson.* 22 June 1876.

paration made now to meet fires in the present state of things?—I think that there is a sufficient amount *quâ* the fires, and merely referring to that, I think that is shown by the results; there is not a fire which has taken place in the metropolis for years which has not been fairly and properly dealt with. Take the fire which occurred the other day, for instance; you do not often have a fire arise more suddenly, and yet, in a very short time, it was confined to its premises; and although from an accident it broke out again 48 hours afterwards, yet it cannot be said not to have been coped with.

5049. Mr. *Ritchie.*] The place was burnt down and destroyed, was it not?—It was.

5050. Do you know how many men were left in London to take charge of all the rest of the metropolis?—I do not know.

5051. Sir *Andrew Lusk.*] Do you think that the gentlemen who brought in the Bill for the halfpenny rate did or did not make a very fair estimate of what the requirements of London were?—A very fair estimate indeed I think; and, taking all things together, the contributions from the insurance offices, and that from Her Majesty's Government, and that from the halfpenny rate, it has worked very well upon the whole. The income of the Board for fire purposes has grown as the requirements of the metropolis have grown, and I am sure the Board have made every possible use of the money which has been placed at their disposal; there has been no atom of waste of the money that we have had placed at our disposal.

5052. The wants have grown, but have not the rates grown as well?—Yes.

5053. As you increase your houses you increase your rates?—Yes, quite so.

5054. What do you want any more money for?—Taking the balance sheet of last year, we are 3,000 *l.* or 4,000 *l.* to the bad; and if we are to increase the men by about 80, it is perfectly clear that there will not be funds enough to meet that additional cost.

5055. Do you think that there should be some additional increase?—I have said that there should be one additional man at each station for the purpose I have mentioned, not that I think the men are overworked at all. I object to the term "overworked" altogether; the great evil which the men suffer from is that they have to kill such an amount of time; they do not know what to do with it.

5056. And you think that sailors, the most racketty und rollicking class of all, are the best class to put to do nothing?—I cannot say anything with reference to that.

5057. You think that a three-farthing rate would be more useful to you for extending your operations than a halfpenny rate?—I think the Board should have more money for their purposes than they have at the present moment. I would not say whether the rate should be three-farthings, or whether the Board should not be left unlimited to raise money as they required from time to time. I think a Board like ours, representing the metropolis, might be left to its discretion to raise such money as they required. All I would say is: Let the insurance offices contribute their quota to what we raise.

5058. What have the insurance offices to do with what you raise?—Because, if you have a lot of goods in the docks, and you have the goods insured in an insurance office, this insurance office stands in your place; they are your underwriters, and you ought to pay for the protection of those goods.

5059. But supposing they were to argue, I do not want you to put my goods out, let them burn, what is it to you?—You must consider your neighbours.

5060. But your object is to extinguish fire?—Your question goes to this, whether or not insurance should not be made compulsory.

5061. Why should it be compulsory?—Because it is the duty of every member of the community that he should protect his property from the casualty of fire.

5062. The doctrine has been laid down that the insurance companies ought to contribute to the expense of the fire brigade. Let us take the analogous case of life. There is, perhaps, as much insurance upon life as there is upon goods in London. Do you think that the insurance offices ought to contribute to the sanitary arrangements of London merely because they preserve men's lives?—I do not see much parity in the two cases, but I may draw your attention

Mr. *G. B. Richardson.*

22 June 1876

attention to this point of view; that every man must die, but it does not follow that every house must be burnt down.

5063. But the principle is exactly the same, is it not?—I do not think it is the same.

5064. I find that the insurance companies have contributed, from the beginning, 167,000 *l.*, and the rates only 456,000 *l.*, and the Government only 110,000 *l*, so that they contribute a very large portion of this money. Another question follows; whether the insurance companies should not be represented upon the Board, which is a very important question when you are laying down the law that they ought to contribute as a matter of right; they may as a favour. But when you are arguing it out, as I have heard you doing, I am obliged to put the question from the other point of view?—But I do not think that they contribute enough.

5065. Take one of the rich jewellers in Oxford-street; the police have to protect their property. Should they pay more police rates than anybody else?—I think there is no parity between the question of insurance from fire and insurance from theft. I only said that you taxed the insurance companies because they are, *ipso facto*, the owners of the goods *quoad* the contingency of a fire. Taxing the insurance offices is just the same as taxing the owner of the goods.

5066. Mr. *M'Lagan.*] I confess I do not see how an insurance company becomes the owner of property simply because it insures the property?—I said that an insurance company became the owner *quoad* the contingency of fires.

5067. What constitutes ownership?—A man being in possession of certain goods.

5068. A man in possession of certain goods can sell them, and do what he likes with them; can an insurance company do that with those goods which are insured?—Just let me assume for a moment that, upon some part of the broad face of the earth, there is a small community of persons who are subject to this contingency of fire, and who find, first one and then another, that they are losing money by this contingency, and agree among themselves that they will mutually insure each other.

5069. That is a mutual arrangement?—It really all starts from that.

5070. We are upon a different subject altogether; the insurance companies of London are generally commercial establishments and not mutual; if you start a mutual company, I think there is some reason, in your position?—If you think the matter out, you will find, I think, that I am correct. I submit that an insurance office, whether it be mutual or whether it be done for a profit, is to all intents and purposes the same thing, that it represents the owner of the property who assigns his goods to an insurance company for the time being, with this contract, that if they are destroyed by fire the insurance company shall replace them, and that, for that liability which the company incur, the owner will pay them so much money.

5071. That property has two owners, in that case?—No; pardon me, it has not two owners.

5072. Surely it has; take a house; the owner of the house *de facto* insures the house; he does not cease to be the owner of the house, because you assess him as the owner of the house?—Only for the purpose of fire.

5073. You assess the owners of property twice, do you not?—No, we do not.

5074. Sir Andrew Lusk took the case of a fire insurance company. Let us take the case of a marine insurance company. Do you think it is fair that you should call upon the marine insurance companies in the country to contribute towards the building and maintenance of lighthouses, and buoys, and other appliances to prevent shipwrecks?—I do not know that I could answer that question off-hand without consideration.

5075. Do you see any difference between that and fire insurance companies?—Yes; I do see a very considerable difference between that and fire insurance, because the purpose of the fire brigade is purely and entirely to reduce the risk of the contingency of fire, and nothing else but that.

5076. I thought it was to extinguish fire after it was there?—So it is; and that is the same thing as reducing the risk of loss. A house is burning, and if you can put it out the loss is lessened, and that loss being lessened, is in the interest of the owner of the property, and if the owner of the propetry has

Mr. *G. B. Richardson.*

22 June 1876.

assigned his interest in the property to an insurance office, it is right that the insurance office, being the owner for that purpose, should contribute to the reduction of the loss.

5077. You think the rate should be increased upon the insurance offices?—I think the rate should be increased upon the insurance offices only *pro rata* with that which is raised from the rates.

5078. I thought you answered Sir Andrew Lusk that you thought the insurance companies did not pay enough?—What I meant was this: Taking the assumption that Captain Shaw is right in his figures, that there is one-third of the property insured and two-thirds not insured, and that the cost of the brigade is something like 82,000 *l.* a year. Knock off 15,000 *l.* in respect of protection of life from fire, that leaves 65,000 *l.*: one-third of that is something like 22,000 *l.* for even money. Now the fire insurance companies only pay 18,000 *l.*, and they ought upon that basis to pay 22,000 *l.* in even money of the present expenditure.

5079. Is the distribution of the fire brigade appliances at the present time as advantageous for the fire insurance companies as it was when the Fire Brigade Committee was constituted?—I should say that the distribution of the appliances of the fire brigade is a great deal more advantageous to them now than it was. Surely it must be so, seeing that it is so much strengthened, and that there are so many more appliances brought to bear upon fires. For instance; take the fire which took place just by London Bridge; that large fire took place just before the brigade was transferred to the Metropolitan Board of Works. I should say that under the present system it would be almost impossible that such a state of things could exist with our present brigade; there the fire ran from wharf to wharf, whereas I think the present brigade would have controlled it much more efficiently.

5080. Mr. *Ritchie.*] That answer which you gave with regard to what the insurance companies should contribute was not at all in accordance with the answer which you gave me; the basis you said it ought to be calculated upon was one-third of the rate paid?—Clearly that is wrong; it is one-third of the total cost of the fire brigade, less the cost of the protection of life from fire; it is clear that that must be the only basis upon which the calculation could properly be made.

5081. *Chairman.*] You would rather that that answer should be taken now than the one which you made previously?—Quite so, because looking at it one must come to the conclusion that it is one-third of the whole property of the metropolis, and one third of the whole cost of the fire brigade.

5082. Mr. *M'Lagan.*] When the fire brigade took over the stations from the old companies, where were they stationed principally?—They were stationed principally in the central parts of the metropolis.

5083. Where the greatest part of the insurable property was?—Yes.

5084. And you have reduced the stations there, have you not?—They have been reduced by two in that particular part.

5085. And you have placed more in the suburbs?—Yes, there have been more placed in the suburbs.

5086. Where there is less insurable property?—Yes, where there is less insurable property in large warehouses, but where there is more insurable property, if you take the space covered, although it is not concentrated so much.

5087. In the suburbs there is a great deal of land not built upon?—Yes, but there are not many fire brigade stations where there is land unbuilt on.

5088. But some of these fire brigade stations were removed from the parts where the valuable property of the City is to the suburbs, and still the insurance companies are called upon to pay their proportion of the expenses?—But the insurance companies are interested just as much in the property of the suburbs as they are in that of the central parts. If they insure 600,000,000 *l.* of property, probably a very much larger portion of that property would be in the suburbs than in the central parts of London.

5089. Is not very much the largest proportion of insurable property about Farringdon-street, and the City, and the docks?—I doubt very much, when you come to take the large number of insurable properties outside the centre of the metropolis, if that would not quite meet the quantity and value in the City.

5090. Have

5090. Have not the insurance companies brought it under the notice of the Metropolitan Board of Works, that the Board of Works have moved stations from places where the larger portion of the insurable property existed, to places in the metropolis where such a large proportion did not exist?—I know that there were some representations made, and I know that they were very fairly and fully considered, but I think that a body like the Metropolitan Board of Works are quite capable of judging of the requirements of the metropolis in matters of that kind. I remember that they removed one or two because they had provided other stations which they thought ample to meet the requirements of that particular district; and I think that when a body of gentlemen meet together, having had the matter under their hands for a considerable time, they must be taken to have fairly considered it, and you must take it that they are right, and not that the insurance companies will be always right.

5091. Do not the insurance companies know their business, and in what portions of the City they have the largest insurances better than the Metropolitan Board of Works can do?—I think the Metropolitan Board of Works would be the best judges, seeing that they have had charge of this matter for 10 years.

5092. But will not you answer my question; did not the insurance companies know their business a great deal better than the Metropolitan Board of Works can do?—No, I say they cannot.

5093. Do you think that the Board of Works are as good judges where those fire brigade stations should be placed as the insurance companies, when you take into consideration the advantage which those stations would be to the companies?—I must demur to the conclusion which you come to, because there are other matters which the Board have to consider; for example, the limited amount of money to be expended upon fire brigade purposes required for the whole of the metropolis; and when they have given consideration to the matter, and come to the conclusion that this or that spot is most desirable for a fire brigade station, I do not think they should be considered to be wrong in that matter.

5094. You laid down the principle that taxation and representation should go together, and from what you stated just now you consider the Metropolitan Board of Works are the parties best qualified to judge where the fire brigade stations should be placed; you have alleged also that it is just and proper that insurance companies should pay a certain proportion of the expense of keeping up the fire brigade; are you prepared to give a representation upon the Fire Brigade Committee to the insurance companies?—No.

5095. Why not?—Because, as I have said before, it is entirely carrying out my principle that the insurance companies should not be represented upon the Metropolitan Board of Works.

5096. Even though they pay towards the expense?—They do not pay. That is just the point of difference between us. It is the owner of property who pays, and the owner is represented upon the Metropolitan Board of Works. The fire insurance company's paying is only the owner paying. There is no difference between the two.

5097. Then we come back to this, that the owner pays twice; the insurance company becomes the owner, and the owner pays?—The insurance company represents the owner, and the owner pays through the insurance office; it makes no difference which pays.

5098. The owner pays the rate also?—The rate represents a totally different thing; it represents the cost of that portion of the fire brigade which cannot be raised upon insurable property because it is not insured. Surely it would be admitted that if all the property in the metropolis were insured which was insurable, then that property which was so insured, that being all of it, should bear the expense of the fire brigade.

5099. Mr. *Forsyth.*] Does Captain Shaw generally attend the meetings of the Fire Brigade Committee?—Always, except when he is engaged at some fire which is occurring at the time.

5100. I suppose the Fire Brigade Committee would not undertake any important change in the management without consulting Captain Shaw?—Or course; nothing of the kind has ever been done.

5101. The Fire Brigade Committee leave the details of the management to Captain Shaw, having confidence in him?—Yes.

Mr. *G. B. Richardson.*

22 June 1876.

5102. The insurance companies are not represented upon the Board?—No.

5103. Have they ever complained of that?—No, on the contrary, that paragraph which has been read from the report of the proceedings of the Committee of 1862, by Sir James Hogg, has rather shown that the fire insurance companies never asked, or wished, or contemplated being represented.

5104. They pay also, I think, 35 *l.* per million of property insured?—Yes.

5105. Have the fire insurance offices ever complained that that was too much?—They have never complained that I have heard of.

5106. You said just now that you were 3,000 *l.* or 4,000 *l.* to the bad; did that mean that the expenditure of the Fire Brigade Committee last year exceeded the amount of the halfpenny rate by 3,000 *l.* or 4,000 *l.*?—It did so; the accountant will give the exact figures; that is to say, 3,000 *l.* or 4,000 *l.* in excess of the amount which is to the credit of the rate for 1875, plus the 18,000 *l.*, or whatever it was, from the insurance companies.

5107. Supposing that being so, the Fire Brigade Committee being of opinion, as we have had evidence that they are, that to a certain extent the brigade should be increased in number and a certain increase be made to the stations, you have not the means of doing it according to your present means?—No; but every year there is a prospective rise in the assessment valuation of the metropolis, and we have found hitherto that that gradual rise in the assessment valuation of the metropolis has recouped the expenditure which has taken place, and which was sometimes in excess of the amount we had in hand.

5108. As I understand, it is a quinquennial valuation?—It is.

5109. You stay for five years therefore upon the old valuation?—No; we do not do that entirely; the Act requires that every year any additional property constructed within the metropolis shall be assessed and brought into the valuation; what it means is, that the old property cannot be altered in valuation, excepting quinquennially.

5110. Can you give the Committee any idea of what increase of rate would be sufficient and ample for the contemplated improvements which you think will be required for the increased efficiency of the fire brigade?—I could not answer that question, because, not being a member of the Fire Brigade Committee, I do not know what new stations are in contemplation; I know they contemplate several new stations in the metropolis, and it would require some estimate with reference to the increased number of men required. Let me say that an increase of stations does not necessarily increase the cost of the fire brigade, because the building of stations and plant is charged to the Consolidated Account, and does not immediately come from the rate; if you were to take 100 men it could be done by ascertaining the cost per head.

5111. Mr. *Hardcastle.*] You maintain that no distinction should be made between the person who insures and the person who does not insure; and you maintain that the person insuring and the insurance company together, stand in the same position as the person who does not insure, as regards interest in property?—What I desired to convey was, that of course the property in the metropolis which is insurable must necessarily have an interest which, *quoad* the contingency of fire is represented by the insurance offices which insure it; that which is not insured has no representative in any way, and we cannot reach it; therefore, the portion of the expense of the fire brigade which must fall upon that which is insured must otherwise fall upon the rate, but it is a principle which I maintain is contrary to every principle of equity and right government.

5112. I think you mean the same thing that I do; in one case the fire insurance offices and the owners divide the risk between him, and in the other case the uninsured person takes his own risk?—Yes, the uninsured person takes his own risk, only he does not contribute to the fire brigade.

5113. He pays rates?—Yes; but in a most unfair proportion.

5114. The rate is calculated upon the rental, or rateable value of the property?—Yes.

5115. Consequently, if there are two persons living next door to one another, paying the same rate, one of whom has 20,000 *l.* of furniture and pictures in his house, and the other is content, say, with 2,000 *l.*, they would both pay the same rate, as ratepayers, to the fire brigade, but the man who has 20,000 *l.* worth

worth of property in his house derives a greater benefit from the fire brigade than the other man, inasmuch as he has a very much larger value which is protected by it?—Clearly so.

Mr. *G. B. Richardsen.*

22 June 1876.

5116. That appears to me to be a fair summary of your argument, that the rateable value does not touch the value of the property contained within the building?—That is the very essence of all that I have been endeavouring to convey.

5117. Mr. *M'Lagan.*] Allow me to just follow that up: we take these two houses; one contains property to the extent of 20,000 *l.*, and the other contains property to the extent of 2,000 *l.*; one house is insured in one insurance company at its own value?—Excuse me, the principle of Mr. Hardcastle's case involved the assumption that neither of them was insured.

5118-19. Mr. *Hardcastle.*] My principle is that it makes no matter whether they are insured or not; the one takes his own risk, and the other divides his risk with the insurance company, and therefore the insurance company and the insurer are one, and the uninsured person who takes his own risk is the other?—Only that if they were both insured the property so insured would through the 35 *l.* per million contribute to the fire brigade, therefore to put your question in the way you wished to put it, you must assume that neither of them were insured, therefore these two persons contribute to the fire brigade only out of the rates; the one has 20,000 *l.* of property which is being protected by the fire brigade, and the other has only 2,000 *l.* of property, both paying to the same extent, and both benefiting to the same extent; therefore that is clearly a want of equity.

5120. Mr. *M'Lagan.*] I am leaving out of the question the moveable property, and I will take only the two houses as bricks and mortar; the one is insured and pays rates, and the other is not insured and pays rates; you insist upon making the insurance company pay upon the first one which is insured?—You mean to say, that inasmuch as the house which is insured will pay its quota in the 35 *l.* per million, that house has to pay its quota again in the shape of rates upon the uninsured property. I have admitted that there is a want of equity in that respect, but it is one of those things which cannot be dealt with otherwise. But let me explain that by saying this, that inasmuch as there is a certain amount of uninsured property within the metropolis, whether it be houses or goods makes no difference, which ought to bear its cost of the fire brigade, and you cannot reach it, what are you to do; the Legislature says that you are to throw this cost upon the rates, therefore all rateable property in the metropolis bears its share of the burden; I say at once that the incidence of that taxation is unjust, but I do not see my way to remedying it; I can only say that it is the most convenient way of raising the amount required.

Mr. *Edward John Thompson*, called in; and Examined.

5121. *Chairman.*] You are the Chairman of the Fire Brigade Committee of the Metropolitan Board of Works?—I am.

Mr. *E. J. Thompson.*

5122. How long have you been chairman of that committee?—I have been chairman since July 1874; my office will expire now.

5123. You are consequently aware of all that has related to the management and working of the fire brigade?—I ought to be. I have endeavoured to give my best attention to the matter.

5124. You are aware that representations have been made, both by Captain Shaw and by the men, of the overwork of the brigade, and the consequent necessity for an increase of the number of men?—That has been represented to the committee.

5125. That matter has been, as I understand, considered by the committee?—We have never had, I think, a representation from Captain Shaw stating that he wanted a large number of men added at once, but there have been from time to time statements made that we were short-handed, and frequently the committee has appointed new men, and generally upon the recommendation of

Mr. *E. J. Thompson.*

22 June 1876.

Captain Shaw. When he has said he has wanted two or three additions made, the men have been appointed.

5126. Those men have been generally appointed as additional men to new stations, or new fire escape establishments?—They have been appointed generally to new fire escape establishments, or where new fire engine stations have been placed.

5127. There was one report of Captain Shaw's which did refer to the question of a very large increase to the establishment of men, which recommended that the number of men should be increased to 900 and odd?—That was before I was a member of the Board, and certainly before I was a member of the Fire Brigade Committee.

5128. Speaking as Chairman of the Committee of the Fire Brigade, are you of opinion that a larger number of men is required, as represented by Captain Shaw?—I think some increase would be very desirable. I have visited some of those stations lately with Mr. Freeman and another gentleman, and certainly I quite indorse the view Mr. Freeman has expressed to the Committee, that there is a monotony about the occupations of the men, and although they are not in any sense I think to be regarded as overworked, yet nevertheless I think a little greater leave would be very desirable for them.

5129. Do I understand from you that you do not admit the statements that have been placed before the Committee with reference to overwork?—I do not think the men, taking the whole year through, are overworked. I think their occupations on the escape duty are trying, but when we remember, as has been put in evidence, that they can sleep every night, and generally do sleep almost every night throughout the year, their duties in that respect cannot be looked upon I think in the light of overwork.

5130. You have heard the evidence given before this Committee already?—I have heard nearly all the evidence.

5131. It has been stated in evidence that there are several instances of very long hours in which men have been unable to take their boots or clothing off; were you aware of such cases?—I must say as chairman of the committee that I was very much surprised to hear that statement, because I do think that Captain Shaw before he made that statement here should have made a similar complaint to the Fire Brigade Committee. Ever since I have been a member of the Fire Brigade Committee I do not remember Captain Shaw having made any complaint with regard to the number of consecutive hours that individual men were at work.

5132. What you would say is that when Captain Shaw has stated that he required a larger number of men for his brigade, he has never brought before your notice the individual cases of hardship and overtime which were placed before us in this Committee?—The question of supplying additional men to the stations has only very rarely been brought before the notice of the committee. Captain Shaw knew as well as the committee did how we were restricted with regard to funds, and how impossible it was, unless we closed some of the stations, that any other of the present stations could have a very much larger number of men; we have had it always staring us in the face that our expenditure was exceeding our income, and, therefore, the question did not arise with reference to further help at the stations.

5133. I suppose Captain Shaw placed before the committee also the facts with reference to the short number of men he had available on duty in case of a great fire taking place?—He has made that statement to this Committee, but I do not remember his reporting in any case of a fire occurring to the Fire Brigade Committee that in consequence of the number of men that had to go on duty that night certain parts of London were unprotected.

5134. You think that the Fire Brigade Committee have never had placed before them the unguarded state of the town, as a reason for giving an additional number of men?—I do not think so, and not only that, but I have myself often asked Captain Shaw, when we have had a pretty long list of fires, and one of them has been of a severe character, what would have happened if one or two other fires had broken out at the same time, and his answer has always been that we should have coped with them.

5135. You do not think that your committee has had sufficient evidence before them of over work?—I have heard that here for the first time.

5136. It

Mr. *E. J. Thompson*, 22 June 1876.

5136. If the matter had been brought before your committee, would it have influenced them in recommending that increased finance should be intrusted to them?—The question of increased finance has been brought by the Fire Brigade Committee before the consideration of the Board more than once, and the Board has not considered that it was necessary to get an increased amount. I myself, when the Consolidated Loans Bill was passing in 1869, endeavoured to get the restriction we were under with regard to the halfpenny rate removed, but the Board did not coincide with my view. I think it is right to say that a great many of the members of our Board have always considered that London was sufficiently protected, as they have also considered that the men's pay was of sufficient amount.

5137. What I understood you to state just now was that you had felt, as a committee, hampered, and that Captain Shaw had felt hampered in recommending any increase for the purpose of doing away with any complaint of over work, on account of your restricted funds?—I do not remember a complaint of over work, and I think it is fair to my committee to say that the question of increased assistance has not often come under its notice, and indeed I think it has never come under its notice.

5138. Do I understand you to state that you have considered upon several occasions the question whether you should apply for a larger amount of income, and that the committee have decided that it was unnecessary?—The committee or Board must, in all cases, have decided that it was unnecessary, because we have never applied to Government to be permitted to increase the halfpenny rate.

5139. Can you give the Committee what the grounds were for the course your committee adopted. Was it that you were not satisfied that the necessity for additional protection had been made out?—I should say that a great many of the members felt that, having regard to the great increase in the population and the great decrease in the number of serious fires, there was no necessity made out for any larger brigade than we had. I beg to say I myself have not coincided with that view. I have endeavoured always to procure for the Fire Brigade Committee the possession of as much funds as I possibly could; but my colleagues have, very fairly I think, taken that view of their duties, and it is quite impossible to hope that we should all agree upon a point like that.

5140. Admitting that although the number of serious fires has been reduced, still it is the duty of the committee to reduce them still further, if it can be done by increasing the appliances?—There can be no question that the reduction of fires would be to the interest of every one in the metropolis, save the insurance offices.

5141. And if you could reduce them more than at present, you would be justified in increasing and strengthening your brigade?—That would depend upon the cost of the increase, because we may go on increasing until we exceeded the value of the loss that might ensue from a few fires taking place.

5142. That the expense, in fact, would not be justified, because it would be in excess of the value of the property saved; is that your opinion?—I do not think I could draw any hard-and-fast line upon the subject. It would bear that view; that you might increase your fire brigade up to the point that although the number of fires might be very much diminished, still, after all, the result might not be worth the cost.

5143. You stated just now that Captain Shaw had not placed before the Fire Brigade Committee the fact of his brigade having been too weak to cope with the number of fires which might be expected to occur?—I was not aware of it.

5144. You are aware that he has stated that in more than one answer to this Committee, although it does not appear that he has done so to the Fire Brigade Committee?—I do not remember such a representation being made to the Fire Brigade Committee.

5145. With regard to the pay of the brigade, as I understand, it has been under the consideration of your committee whether that pay should be supplemented by a superannuation scheme?—It has.

5146. You, I believe, are in favour of such a mode of dealing with the pay of the brigade?—Yes.

5147. That is to say, in your opinion, the proper mode of paying a brigade like the fire brigade is to give them a certain amount of wages, and a deferred

Mr. *E. J. Thompson.*

22 June 1876.

payment in the shape of a superannuation scheme?—Yes, I would rather the men should have a little smaller present payment, in order that they might have the comfort and assurance of a deferred pay, because I think there is a good deal in Captain Shaw's argument in that respect, that it would tend to keep men in the brigade.

5148. You look at deferred pay as having the effect of keeping the men in the brigade after you have spent a certain amount of money upon their training?—Yes, that is my opinion.

5149. Is that the view of the committee?—That question has not been before the committee. The question being a question of ways and means, and money to be spent has been sent to the Works and General Purposes Committee, and it is the Works and General Purposes Committee which has had the subject under consideration. I wish it had been sent to the Fire Brigade Committee, because I think that my committee would have made a report sooner than the great pressure which lies on the Works and General Purposes Committee enabled it to be done, and that by this time probably the question would have been settled.

5150. I gather that in your opinion that is the proper mode of paying the men?—The question has not been broadly put to the members of the Fire Brigade Committee, but I know a great many of the members of the committee feel it is desirable that there should be a superannuation fund.

5151. Upon the question of the increase of the stations and engines throughout the metropolis, are you of opinion that any increase ought to be made, looking to the protection of property from fire?—The Fire Brigade Committee, with the means at its command, has done all it could in that respect. We have hitherto in one or two cases transferred a station; we have in two cases closed stations, but we have at the same time built a great many new stations. At the present time we are building one at the Isle of Dogs, and last Friday a resolution was passed to build another one at Shooter's Hill. Those are entirely new stations in districts which have never had stations before, therefore I take it that the Fire Brigade Committee, looking at its available means, has always sought to increase the number of stations up to the very limits of its power.

5152. I suppose you would admit the principle that as you are intrusted with the protection of property from fire, it is the duty of the Metropolitan Board of Works and the Fire Brigade Committee as their agents to increase the number of stations as far as their capital will allow them?—As far as their capital will allow them, there can be no doubt that they are liable to do that.

5153. And not only are they liable, but would think it wise to do it?—They would think it wise, prudent, and good to do it.

5154. Upon the principle that the greater the number of points from which you can bring to bear upon a fire the appliances for reducing it, the greater the chance of reducing the number of serious fires?—There can be no doubt that as Mr. Freeman put it, if you could have a fire engine in every street you would have very much greater security than you have now, although even then I take it they would be unavailable at times, because whatever the appliances which may be available in the immediate neighbourhood of a fire, sometimes nevertheless it becomes serious.

5155. That is to say, by attacking a fire at an earlier period you might prevent it from becoming serious?—Yes; by attacking it at an earlier period. Every fire could be rendered slight by attending it instantaneously, but my experience with regard to fires, having attended a great many of them, is that where the fire lays hold of a house before the appliances can be brought to bear, the only thing the fire brigade can do is to cut off the flames from other property.

5156. That is in the case of large property?—Large or small. A small house well on fire burns quickly, and the fire brigade seek to save the next property.

5157. Is not that upon the assumption that the fire brigade engine does not arrive till a certain number of minutes after the fire has started, and when the fire has got sufficient hold of the house to prevent them from restricting it to the room in which it began?—It often arises from the fact that fire smoulders, and does not reveal itself until it is all at once one large conflagration.

5158. You

Mr. *E. J. Thompson.*
22 June 1876.

5158. You heard the point which I put to the previous witness with regard to the assistance which might be rendered to the brigade by the police by the establishment of fixed points or stations, where the police could assist the brigade by bringing material to bear upon a fire at an earlier period than an engine could arrive; what is your opinion upon that point?—I have no doubt that some co-operation of that kind might be usefully devised with regard to the police. I visited Liverpool and Manchester with some members of the Board, and I found in Liverpool that the police and the firemen were one body, that every man had been a policeman, and that when they had exhibited good conduct, after a time they were promoted to be firemen-policemen. They have the charge of the hose and pipes, and other matters in the district within their beat, and having hydrants laid down over the town, they were very often able to bring a hydrant to play instantaneously on a fire; but still very large fires take place in Liverpool.

5159. You have mentioned the word hydrants, and that brings us to the question of the water supply of the town at present; are you of opinion, with other members of the Metropolitan Board of Works who have given evidence before this Committee, that it would not be advisable to apply hydrants throughout the town, unless in doing so you could do away with the use of engines?—I never was more convinced of the necessity for our having always as good a staff of engines as we have at the present time than I was last week. After leaving this Committee and going into the City I was present at the fire at Brooks' Wharf. I have a tracing here of Thames-street and its neighbourhood, and the position of Brooks' Wharf with regard to the neighbourhood. (*The same was handed in.*) Now, if Thames-street had had hydrants placed even at every 200 feet along it, Brooks' Wharf is so placed at the end of a long narrow entry 300 feet away from Thames-street, that had there been a hydrant exactly opposite that entry the building would, nevertheless, have been 300 feet from it. If the hydrants were placed 200 feet apart it might so happen that 100 feet from the end of that entry was the nearest hydrant that could be brought into action. Now, it seemed to me that at the most at that fire you could have brought three, or it might be five hydrants to play upon it, whereas there were nearly 20, I think, of our steam-engines there in a very short space of time after that fire broke out, and all of them were wanted to control that fire, therefore I do think that whatever expense the metropolis may be put to in the case of hydrants, and however serviceable they may be at times in putting out small fires, the other establishment, our engines and our stations must all be kept up to the same amount as they are now if some fearful catastrophe is to be obviated.

5160. Supposing you admit that a larger protection may be necessary for the metropolis in the way of additional stations, might not that increase be avoided by supplementing your existing staff by the putting down of hydrants?—I have no doubt that hydrants, if we could depend upon the pressure of water within the pipes, would be very useful in the suburban districts, but the cost of putting them down would be so great, and the fires occurring in those districts are really so few, that as I said just now, it would become a very serious question of cost against remedy.

5161. You are aware, are you not, that in one part of the metropolis the Kent Water Company's district, there are certain portions of that district in which hydrants have been placed, and where they are used efficiently in the case of fires without the intervention of engines?—I know that there is a certain portion where hydrants were placed, because our committee were invited to see them. I was not able to go that day, but I am not aware that the source of supply of the Kent water supply is from gravitation. I have always understood that it was from hydraulic pressure.

5162. I asked you whether you were aware that there had been fires in that district which had been extinguished by hose attached to hydrants without the intervention of steam engines?—There can be no question that wherever hydrants are placed with a sufficient pressure of water behind them they will in many cases enable the use of engines to be superseded.

5163. Even where the hydrants do not absolutely enable the use of engines to be superseded, might they not assist the staff of engines by bringing water more quickly to bear upon a fire than at the present moment?—Yes, if there were

Mr. *E. J. Thompson.* 22 June 1876.

some policemen or somebody close by to deliver the water more quickly, no doubt fires would be extinguished more readily than they are at present.

5164. A man so placed would not be able to use the existing system of plugs, from ignorance of where they are placed?—The man would know how to affix the necessary post to the hydrant. I have always understood that where there is a constant supply, and any pressure behind it, a hydrant must be put, because it is a mechanical arrangement which will stand pressure which a wooden plug will not.

5165. That a wooden plug cannot be placed upon a fully charged service pipe, but that if you have a fully charged main, with a hydrant and service attached, anybody can bring the water to bear upon the fire?—Yes, no doubt.

5166. Therefore, hydrants are a considerable security to the town from fire?—No doubt hydrants are a considerable security from fire, but I have a very great doubt about the wisdom of the cost being undertaken for that additional security.

5167. What you would represent is that, in your opinion, although greater additional security to the ratepayers would be attained, the cost to the ratepayers would not be sufficient to justify hydrants being placed?—From the evidence we have had, the cost of placing hydrants upon the 1,200 miles of streets and roads in London would be something like a million of money. Now, if that million of money were borrowed under our Consolidated Loans Act, and spread over a term of 50 years, we should have, if we applied 20,000 *l.* a year in the reduction of the principal money, a cost for the first year upon the metropolis for interest and principal money, of 55,000 *l.* Of course that would diminish year by year, until in the last year of the 50 it would be only the case of 20,000 *l.*, with the 800 *l.* interest upon it, but the cost for the first year would be 55,000 *l.*, and travelling down a little year by year, it would, during the first 10 years, be a very large increase to the ratepayers of the metropolis.

5168. Can you tell the Committee upon what calculation was based the amount which you have stated was the cost likely to be incurred?—I think Captain Shaw has made some report upon the question of the cost. I think our engineer, Sir Joseph Bazalgette, has been requested to estimate the cost, and, so far as my memory serves me, the amount has been roughly stated to be a million of money.

5169. That was for placing hydrants upon the whole of the metropolitan area?—Upon the roads and streets where houses are built; it would be no use to go beyond the houses.

5170. Suppposing you placed hydrants upon newly laid pipes, that cost would be very much reduced, would it not?—There might be a little reduction with regard to digging up the ground, and there was some other matter of mechanical arrangement with regard to old pipes which I am not sufficiently informed of, but I did not get the calculation to my mind as being capable of being materially reduced by circumstances of that sort.

5171. You stated that you were aware of the system adopted at Manchester?—I mentioned Liverpool.

5172. Are you aware that the estimate for placing hydrants upon the mains at Manchester did not exceed 6 *l.* per hydrant, whereas the estimate that was made to your Board came to 10 *l.* or more?—I have heard that the expense was roughly estimated at from 4 *l.* to 10 *l.* I do not know whether an improved hydrant upon that in Manchester would be sought to be placed upon the streets of London, but in any event the cost would have to be a very large one.

5173. Was not that amount calculated upon the fact that the hydrants were placed upon the mains as they were laid?—That was not within my knowledge.

5174. What I wished to ask you was, why the Metropolitan Board of Works had not upon all the mains laid in the last few years availed themselves of what you admit to be an easier mode of getting water from those mains in places where the companies have represented the supply to be a constant one?—In Manchester the supply is obtained from 170 to 400 feet above the level of the town; therefore it is gravitating and constant, but we have no evidence before the Board to show us that there is anything like that constant pressure brought to bear upon the constant supply of water within the pipe, which would warrant

us in going to the expense of placing hydrants upon them; and, I think, looking at it from a business-like point of view, because I do not at all hope to state anything with regard to water engineering that will influence the Committee, but from a business point of view it does seem to me that a pressure upon the water, to be obtained by hydraulic means, will be very likely to fail, and possibly just at the moment when it is most wanted.

5175. That was what induced me to ask you whether you were aware of the district of the Kent Water Company where hydrants have been put, and where they were successfully used, showing that what you have just said did not apply, at all events, to that district?—We have never had any report brought before us at the Fire Brigade Committee of any fire in that district having been extinguished by hydrants, that I remember.

5176. Are you aware of the fire at Gabriel's timber yard, which I asked the last witness about on the previous day?—I do not remember that fire.

5177. If it were shown, as I think it may be from this particular district, that where you have mains constantly charged, and hydrants attached to them, you do get facilities for bringing a supply of water more quickly to bear upon a fire, and that you can cope with fires through that means; do you think that your Committee will be justified in refusing to apply those hydrants, after the number of recommendations of Committees of this House for the use of hydrants to those districts where the mains are constantly charged?—The question of hydrants, the same as the question of ways and means of any other sort, does not come under the notice of the Fire Brigade Committee, and my committee therefore are only members of the Board with regard to that question; it is a very large question, involving the expenditure of a large sum of money, and it has always been dealt with by Mr. Richardson's Committee; therefore the Fire Brigade Committee have not had it under their consideration.

5178. Are we to understand that a point so entirely relating to the efficiency of the brigade and its utility is out of the jurisdiction of the very committee which has the management of the fire brigade?—It has, by the decision of the Board, been given over to the consideration of the Works and General Purposes Committee, and it has not been brought before the committee.

5179. Then the management of the fire brigade is a very divided responsibility?—We report all our proceedings to the Board, and the Board are the ultimate judges of what shall, or shall not be done.

5180. But I understand that you, as the Fire Brigade Committee, have all the management of the fire brigade matters, and that all matters of detail come before you for decision?—No; a question of increase would be determined upon by the Board, and it would be referred to the committee to carry it out.

5181. What I meant by that was, that when Captain Shaw represented that an additional station or additional men were required, would his representation be considered, first, by the Fire Brigade Committee?—Exactly.

5182. And you are responsible for recommending to the full Board the adoption or otherwise of Captain Shaw's recommendation?—In that case we should be.

5183. And for the general efficiency of the brigade?—We should.

5184. Yet, notwithstanding that, you are not aware, unless it is sent to you, of any recommendation which may be made for the increase of that efficiency by multiplying stations or otherwise?—If an application came from a district for a fire station, it would go to the Board, and the Board would, as a matter of course, refer it to the Fire Brigade Committee, who would deal with it, and report their views to the Board. I may say that the Fire Brigade Committee have always been compelled, in looking at all these things, to remember the state of the finances, and it would not have been serviceable to themselves or to the Board to have taken up recommendations to the Board which the Board had no power to carry, because we are only able to spend a certain amount of money per year for current expenses, and although a new station might be built out of what is called "capital account," and the money might come out of the Consolidated Loan Fund, still every additional station would require additional expenditure to work it, and the current expenditure could not overlap that certain amount which we were always certain of, and which we were to a certain extent equal to.

Mr. *E. J. Thompson.*

22 June 1876.

5185. When an application for a fresh station having come to the Board is sent to the Fire Brigade Committee, do they proceed to take evidence with regard to the point of efficiency?—Yes; the usual mode is to ask the member of our Board for that district to give us his opinion upon the matter.

5186. Do you hear Captain Shaw with regard to the necessity of the case?—Certainly, Captain Shaw is present at all meetings of the Fire Brigade Committee at which he can attend.

5187-8. And you are guided, to a great extent, by the opinion he may express with reference to whether a new station, or a new engine, or a new addition to the men, is required?—Looking to our funds, we are guided by his opinion chiefly; that is the skeleton in the cupboard which we have never been able to surmount.

5189. Supposing you to find yourselves in the happy position that you consider you have income sufficient to justify you in following out Captain Shaw's recommendation, I suppose you refer it back to the general Board?—Our reports are taken up to the Board, and determined upon at the Board meeting in public.

5190. Under the circumstances of your recommendation, do the Board adopt your recommendations invariably?—I think that both myself and my predecessor in the chairmanship of the Fire Brigade Committee may congratulate ourselves in having our reports adopted.

5191. If not adopted, does the general committee take further evidence upon the matter in question?—The Board would not take evidence. If they were dissatisfied with the report, or thought that it should be varied, they would move that it should go back to the Fire Brigade Committee for further consideration and report, and that report would come up again before the Board.

5192. What I wish to arrive at is this: you are entrusted, as a committee, with the management of this brigade; supposing you think that you are justified in granting an additional station, your report is taken up, and, before the Board refuse it, supposing they refuse it, do they hear the evidence upon which you have founded your report?—Clearly, the Board not only hear what the Fire Brigade Committee have to say upon the subject, but hear what other members of the Board have to say, and they arrive at a conclusion which I do not desire to contest at all. I have generally been so happily placed that my reports have been passed.

5193. You mentioned that you had visited some of the stations recently?—Yes.

5194. Do I understand you to concur with other members of your Board in thinking that the duties are not so severe as they have been represented?—In those stations the absolute work was very light, but of course they were in some degree suburban stations, namely, Paddington, Kensington, Fulham, Chelsea, and therefore as the necessity for work is not so heavy there as it is in some places, I was the more astonished when I heard a statement from Captain Shaw that a man at some suburban station had had 106 consecutive hours of duty, because seeing that we are charged every month a considerable amount for petty payments for the removal of men from station to station I should have thought that that would have been brought before Captain Shaw's notice, or the notice of the superintendent of the district before half the 100 hours had run, and they would have ordered the removal of a man from a distance to take that man's place. I think that was a matter of administration which could easily have been met, and I am very sorry to have heard it made here as a complaint against the *régime* of the Fire Brigade Committee, because it does seem to me to be a matter entirely within the province of Captain Shaw and his officers.

5195. As I understand these stations, were not any of them what we call large stations?—There were eight men at one of them, and we have 10 men at our large stations; they are not small stations by any means.

5196. What station were the eight men at?—Paddington; seven at Kensington; five at Fulham; eight at Chelsea, and eight at Paddington.

5197. In Mr. Freeman's answer he suggested that the men coming back from escape duty should be sent to bed, while the men on duty at the station should do what was required in the way of cleaning, but might it not happen that those men

men who were at the station had been out all night?—That might be possible, but that would be within the cognisance of the chief of the station, and he would be able to arrange that; my opinion would be that in the winter time (because I do not think the men are much affected by out-door duty in the summer time), when they come off cold from the fire-escape duty they might be allowed to go to bed, unless it were by reason of some extraordinary case of fire, or of labour, that prevented it.

5198. Then you endorse what was said, that you think the question of over-work is more a question of the arrangement of the work than of the actual number of hours in the particular instances stated?—Yes; I think you could not have more forcible evidence upon the point than that given by the man Morris, who in his evidence stated that the men rather liked a fire, because it was a little excitement for them, but what was most trying to them was the waiting for a fire.

5199. At the same time it is a very necessary part of the duty of the brigade?—They must be upon the spot certainly.

5200. And ready to start at a second's notice almost for any fire that occurs?—They must be upon the spot, and since our means were left more uncontrolled in 1869 by Parliament, we have made, in every station we have built, a number of rooms, so that all the men belonging to that station can live upon the premises.

5201. Is it the fact that in all those stations which have been created since 1869 you have no men lodging out?—We have no men lodging out.

5202. You are prepared to say that that is by far the most advantageous way of dealing with the brigade?—It is very advantageous with regard to having the men on the spot, and it is also economical as a matter of finance, because the extra cost of the station is nothing like the cost of the outlay involved in paying for the lodgings.

5203. Does not a difficulty occasionally arise by a number of the men marrying at those stations, and your finding yourself short of room in consequence?—The matter of marriages and births has not been brought before the notice of the Fire Brigade Committee, but I found in going round that which, although it might be a little against the rule, still the Fire Brigade Committee would readily concur with; that is to say, we found men occupying apartments within our buildings for half-a-crown a week who, by right, should have lived out of the building and paid for their own apartments, namely, fourth-class firemen. But we do not complain of that. We believe that Captain Shaw does his very best in order that all married men may have the best accommodation they can at the smallest amount of charge.

5204. In consequence, however, of this excessive irksomeness of duty, if not over work, you yourself feel that a larger staff is required to enable men to go on leave?—I think that the work would not be considered too much if those men got, as the men do get in Manchester, one day a fortnight leave. I should like to see the men with a clear 24 hours off in 14 days; that is to say, after 13 days' work one day's relief. I think if you were to examine the men upon that point you would find that they would hold that that would about meet the exigencies of the case. That would require not a very largely increased number. Mr. Richardson has told you that in his own district the men get, upon the average, from four to six hours a week leave. I found that in a station we visited the men, during the preceding month, had, upon the average, 28 hours' leave allowed to each of the men in the station.

5205-6. What station was that?—I believe it was Paddington. Now that would be more than one day in a month; therefore, with very little addition, all the men at the station could have two days in a month leave, and that I think they should have.

5207. The general belief is that one day a week is supposed to be set apart from work, is it not?—There are a great many men in London who work throughout the seven days of the week, and certainly men who are paid for seven days' work are expected to work the seven days. I am not for curtailing the men's pay because they would get one day's holiday in 14 days, but that they should be paid for the whole of that time.

5208. You think that that would be desirable for increasing the efficiency of the brigade?—I think it would be desirable for the purpose of making the men satisfied;

Mr. *E. J. Thompson.*

22 June 1876.

satisfied; I do not think that the brigade requires much strengthening in other respects, because fires have always been coped with, and the number of serious fires is materially decreasing.

5209. Under those circumstance I suppose you are prepared now to recommend that the income of the brigade should be increased by removing the fixed halfpenny rate to which you are now limited?—Individually I have been always of that opinion, because I endeavoured in 1869 to get the restriction taken off when our Loans Act was passing through.

5210. Do you agree with other members of your Board, that if that were done a proportionate increase ought to be made in other contributions?—I have some matter I should like to lay before the Committee. I feel that you would hardly be able to go into it now, but it opens up an entirely different view of what is the value of the property insured in London from that which the honourable Member for the Tower Hamlets put as a question to Mr. Richardson I hope to show the Committee that one-third of the house property is not at all the question that must arise, and that the fire insurance offices ought, from other reasons, to pay a very much larger contribution than they do at the present time.

5211. Sir *Henry Peek.*] You said that the men should have one day a fortnight clear leave?—Yes, and be paid for it.

5212. Would you allow the men to go to church?—There would be no difficulty at almost all our stations in the men going to church. Mr. Freeman brought that out clearly.

5213. *Chairman.*] Mr. Freeman was told that there would be no difficulty in two of the men going to church; do you know where the church is with regard to the station at Paddington?—The church is stated to be about 40 yards off.

5214. I suppose that it is absolutely necessary that the man in charge at the station should know where his men are?—Yes, the man there said there would be no difficulty if they would go to church, if you could depend upon them doing that.

5215. May not the statement to Mr. Freeman have been this, that because the church was so near and he could keep his eye upon his men, he could let a couple of them go?—We put the question at all the stations, and we found that there was no difficulty with regard to the religious part of the question, if the men chose to avail themselves of it.

5216. Sir *Henry Peek.*] That is quite different from the evidence of the men themselves?—I do not think that you have had evidence from the men of those districts.

5217. *Chairman.*] You mean the man in charge of each of the stations you visited stated to the members of the Board who went round, that there would be no difficulty in a portion of his force going to church on Sunday?—That is so.

5218. Sir *Henry Peek.*] You only went to the larger stations and did not go to the smaller ones?—We went to the four stations; at Fulham they have five men; we have hardly a station with fewer men than that.

5219. *Chairman.*] Let me ask why you selected those two stations, where the work was light, instead of going to the heavier and more important stations?—I think the matter arose in this way, there had been some evidence given in this Committee with regard to something that had occurred at Chelsea station in reference to a fire, and we, I think, went in that direction sooner than any other, in order that we might really see what amount of work the men had upon their hands.

Monday, 26*th June* 1876.

MEMBERS PRESENT:

Mr. Clifton.	Sir James Hogg.
Mr. Forsyth.	Mr. Locke.
Mr. Hankey.	Sir Henry Peek.
Mr. Hardcastle.	Mr. Ritchie.
Mr. John Stewart Hardy	Mr. Young.
Mr. Hayter.	

SIR HENRY SELWIN-IBBETSON, BART, IN THE CHAIR.

Mr. *Edward John Thompson*, re-called; and further Examined.

Mr. *E. J. Thompson.*
26 June 1876.

5220. *Chairman.*] BEFORE we go to the point which you wish to enlarge upon, I should like to ask you one question with regard to the fire at Brook's Wharf, which you mentioned. Did I understand you, when you handed in the plan on the last occasion, to say that there was great difficulty, from the narrowness of the street approaches, in bringing the engines to bear upon that fire?—No, what I stated was that, from the narrowness of the street, and the distance it was from Thames-street, there would have been difficulty in bringing hydrants to play. If hydrants had been placed all along Thames-street, according to my view, merely a business-like view, only five, at most, of them could have been brought to bear upon the fire, whereas our engines could be brought to bear to any number.

5221. That is supposing hydrants to be fixed upon the mains?—Yes.

5222. Were any floats employed at that fire?—I am told by Captain Shaw that all our floats were there and did good service. The honourable Baronet asked me a question on that point, and Captain Shaw told me that the floats were there in time, and unless interfered with by the wind, that they did effectual and good service,

5223. Of course with regard to hydrants and their being brought to bear upon a fire, it is only a question of the length of hose, is it not?—A water engineer will tell you better than I can hope to do what may be the loss of power in water running through a small hose of any length, but looking at the question practically, it does seem to me that a very great loss of power would ensue in comparison with that which would arise from an engine, the pumping power being close at hand.

5224. You mentioned that to show that you would not be able, in the case of hydrants being placed upon the mains, to do away with the use of engines?—That was my impression.

5225. Did Captain Shaw tell you the time that elapsed before a float was brought to bear upon the fire?—I asked Captain Shaw if the floats were there as rapidly as they could be expected to be, and he said, "Yes, certainly, I have no report to make upon the subject. Everything was well done, and in the quickest time."

5226. In answer to my question with regard to a proportionate increase of contribution being required from the insurance companies if the halfpenny rate were increased to a penny rate, you stated that you had some points which you would like to submit to the Committee, differing, to a certain extent, from the inference to be drawn from the question put by an honourable Member of this Committee; will you now state those points to the Committee?—Captain

Mr. *E. J. Thompson.*

26 June 1876.

Shaw has stated that the property of London is worth 1,620,000,000 *l.*, and that one-third of it, or 540,000,000 *l.* is insured. That must be the amount insured, because we receive contributions upon it. Whence he got those figures he did not say. I wish to show how unreliable they are; at all events, as applying to the question put by the honourable Member for the Tower Hamlets to Mr. Richardson, in reference to the relative proportion the fire insurance companies ought to pay, as compared to the amount paid by the ratepayers. The honourable Member said, as the produce of the halfpenny rate exceeds 48,000 *l.*, and only one-third of the property upon which the rate is made is insured, wherefore should the insurance offices be called upon for more than one-third of the sum so raised from the rate? I am not sure whether evidence has been given before this Committee that the rateable value of the property assessed at the halfpenny rate is over 23,000,000 *l.* for the year 1876, and that the Board calculate to receive over 48,000 *l.* therefrom; the figures being 48,148 *l.* 11 *s.* 4 *d.* upon something over 23,100,000 *l.* Now, without going into the question of what portion of the gross yearly rental value pertains to the freehold of the buildings, *i. e.*, to land which will not burn, I take the rateable value as the basis of calculation, and assume that half the property from which the Board receives rates is insured, and not one-third only, as stated by Captain Shaw. I make the value of the half to be as follows: the value of the freeholds I leave out, and treat every building as being of leasehold value only. That value will be more or less according to the age or position of the property; in many cases it will be as low as eight times the yearly value, in some cases 10, in some 12, and in the case of some of the best buildings 15, or even 20 times the yearly value; but I consider a fair average may be struck at 12 times the yearly value, and if so, the whole insurable value of the property will be 12 times 23,000,000 *l.* or 276,000,000 *l.*, and a half of that, or 138,000,000 *l.*, will be the amount of houses and buildings insured, and not 540,000,000 *l.* As the number of houses in the metropolis is known, I have no doubt that the insurance offices can nearly get at the number insured. I am surprised to find that put at so small a proportion as one-third, it may be more than half; but even if the whole were insured the amount would be less than 540,000,000 *l.* by 264,000,000 *l.*, or nearly half; it follows, therefore, that the larger proportion of the 540,000,000 *l.* of effected insurances must be upon goods and not upon buildings liable to the rate. It seems to me therefore that the fire insurance offices instead of being relieved should pay much more than they do, *i. e.*, if half of the value of the buildings liable to the rate be insured the fire insurance offices should in equity pay a sum equal to that paid by the ratepayers, and should also pay a larger proportion for the amount of insurances upon goods, which the ratepayers pay to protect, though they receive no rate in aid from it. England is the great carrying nation, and London is the great depôt of the world for goods: the ratepayers of London are now protecting the goods of the merchants; goods which may be in our bonded warehouses, and from which no profit may be derivable to the community, excepting to the commission agents who are concerned, and the insurance offices who derive great benefit from those insurances; and if I might humbly put this case still further, I would put it as against the Government that the ratepayers are paying not merely towards the protection of the Government buildings, towards which the Government very liberally, I think for that end, give us 10,000 *l.* a year, but they are also paying towards the protection of goods upon which duties may be leviable, but which duties may, or may not (for I do not know the customs law upon that subject), come into the possession of the Government just as they may be preserved intact or not. Of course I should like to say that I do not desire to treat this question at all as one pertaining merely to the question of pounds, shillings, and pence on either side; it is to my mind, more than any other, a municipal question, one which should be dealt with by a municipality; but if the ratepayers are called upon in their aggregate capacity to pay for the protection of the buildings of London, then that view might be carried still further by saying that the insurance offices should insure goods only, and that those who pay for the protection of the buildings rateably, should have the benefits to arise from the insurance of the buildings rateably. I do not wish to urge that point at all, because I do not wish it to be put strongly. My view is merely to endeavour to convince the Committee that the insurance offices, rather than

being

being relieved, should pay something more. I have a return here showing those different values I have set out. It shows also what is the payment derivable from the insurance offices at 35 *l.* per million, what it would be at 40 *l.* per million, and at 45 *l.* per million, and, what I think it ought to be put at, 50 *l.* per million. The contributions, in that last case, from the insurance offices upon the rateable value of the metropolis, would amount only to 27,000 *l.*, and as I understand, before the fire brigade was handed over to the Metropolitan Board of Works, the insurance offices did expend out of their revenue some 20,000 *l.* a year in the employment of the fire brigade, and would willingly have continued that outlay, but some offices, very unfairly, I think, would not contribute. (*The Witness handed in the Table.*)

5227. The whole of your statement goes to this, as I understand, that you think, in any provision against fire, property generally, according to its value, should be equally taxed?—Under the rate it is.

5228. Are you aware that, although that idea is, to a certain extent, allowed by the Fire Brigade Act with regard to the metropolis, and under one or two other local Acts with regard to other towns, it is not considered the basis of calculation with regard to the country generally?—I heard you put a question with regard to some decision which had been arrived at with regard to a place called Drighlington. Now Drighlington is a little place of 4,000 or 5,000 population, in Yorkshire, and how any question could arise upon the part of a claim from that place for aid from the insurance offices, I cannot conceive.

5229. At the same time, I suppose you will admit that the principle laid down by the law upon that occasion is a principle which is not governed by the fact of its being a small town only?—No; but there would be no statutory enactment with regard to Drighlington upon the subject, whereas the Legislature has very wisely, as in the case of London, said as distinctly as it can possibly do that they are to contribute.

5230. There you come back to what I have said, that with the exception of London and its Fire Brigade Act, and certain towns which have local Acts, in which provision of the same kind is made, generally throughout the country the law does not consider that a proper basis for levying a rate for the purpose of extinguishing fires?—No doubt; and looking at the matter broadly one would say, that unless it were in the ports where merchandise and bonded goods are stored, that might be a pretty fair arrangement.

5231. Would you maintain that because of the wealth which is brought into London, therefore the insurance offices, having charge of that wealth, should be taxed?—Parliament has thought fit to direct that the fire insurance offices in London shall pay some proportion of the cost, and they appear to me to have done so with the greatest goodwill. I see no reason, seeing that so large an amount is paid for their benefit by the ratepayers of London, why they should not contribute, and I think even more largely than they do now.

5232. But that was as between the fire insurance offices and the Government and the Metropolitan Board of Works, who were drawing that Bill, a voluntary agreement to pay a definite sum; and, as it was a voluntary agreement, ought not any departure from the general custom throughout the country, with regard to the manner of raising money for this purpose, to be also by agreement?—A voluntary agreement having been arrived at, it would certainly, upon a revision, be open to consideration.

5233. And be open to a fresh voluntary arrangement?—I think when Parliament has once enacted that a certain course of contribution shall be followed, it is scarcely afterwards to be called voluntary, either upon the part of the ratepayers or the fire insurance offices.

5234. Simply upon the principle that the original Act having been drawn upon a voluntary agreement, that voluntary assent forms part of the conditions?—Then I should now ask that the fire insurance offices do now voluntarily see that the cost of everything is now much more than it was when that 35 *l.* per million was put on.

5235. I quite admit that, in making a fresh arrangement, it is open to the Metropolitan Board of Works, as representatives of the ratepayers, to say, You made this arrangement and were consenting parties to it. The conditions as to the pay of the men and the value of property having altered since those days, we ask you now to reconsider your voluntary arrangement with regard to its

Mr. *E. J. Thompson.*

26 June 1876.

amendment. But that is very different from taking power, under a fresh Act, to compel the companies to increase their contributions?—But certainly powers were taken under that Act that they should contribute their 35 *l.* per million.

5236. By consent?—By consent, no doubt; but the powers were taken, and it became an enactment.

5237. You stated that London, being the centre of the commerce of the country, was the place where a larger amount in value was deposited than in other places?—A very large amount in value, of course.

5238. And that that was one of the grounds which you stated in favour of the fire insurance offices contributing a larger amount, so as not to place the strain of raising any further income upon the taxpayers?—I have not said that the taxpayer should not pay more.

5239. What I meant by that was that if a larger amount is taken from the fire insurance companies a smaller amount would have to be contributed by the ratepayers; and your reason for saying, as I understood, that that should be so was that the amount of property deposited in London was so largely in excess of what it is generally throughout the country?—I think it must be tolerably evident that about one-half of the insurances are effected upon goods, and not upon buildings.

5240. And because those goods are centered in London, therefore the ratepayers in London are, in your opinion, entitled to ask the insurance companies to contribute largely towards the maintenance of the brigade?—The ratepayers pay rateably according to the value of their buildings, and therefore they are in one common circle to protect each other so far as respects that; but they are not in one common circle with reference to the protection of their goods, which may be a few hundreds in one house and thousands of pounds worth in another house; they are under no comity with regard to the protection of their goods; their value is thrown upon the insurance companies for payment when burnt, and the duty of extinguishing the fire is thrown upon the ratepayers through the fire brigade, who have no comity in the matter, because they are bound to go to every fire.

5241. But the ratepayers in London benefit by this large amount of wealth being deposited in the town?—No doubt.

5242. The wealth of London arises from its being the depôt of this commerce?—Yes.

5243. Therefore might it not be argued that the ratepayers of London should protect that commerce when centered there?—I think it being established that the fire insurance offices should pay something, a very reasonable view should be taken of what they ought to pay.

5244. Your argument is based upon this, that they having unluckily for themselves fallen into that agreement, that gives you a right which would not exist in other towns to call upon them to contribute more largely?—The wealth centered in London contributes to their prosperity, and it is but a fair return that they should pay something very small towards the cost of the protection of that wealth.

5245. That was all that you wanted to put before the Committee upon that point, I believe?—Yes.

5246. Did I ask you when you became chairman of this committee; was it in 1873?—No, it was in July 1874. I think I was wrong before when, in answer to a question, I stated that some requisition from Captain Shaw did not occur in my time as a member of the committee; it did occur during that time, I am told, but not since I have been chairman of the committee; I have not made myself thoroughly acquainted with the nature of that report.

5247. I have only one more question to ask you, and that is this: I understood you, upon more than one occasion, to state that all financial questions, such as with respect to providing hydrants and new stations, went to the Works and General Purposes Committee, and not to the Fire Brigade Committee?—A large question like that of providing hydrants for London would go to the Works and General Purposes Committee, but the question of a new station would be referred, upon application from a district, to the Fire Brigade Committee to report upon, and be afterwards dealt with at a Board meeting.

5248. Do I understand from your saying that the consideration of a large improvement,

improvement, such as hydrants, would not come before the Fire Brigade Committee, that that committee does not consider the question of improvements with regard to the efficiency of the brigade?—The question was so large a one that the Board, and I must say I think wisely, referred its consideration to a committee of which every member of the Board is a member.

5249. I suppose you would admit that as the Fire Brigade Committee have the management and control of this brigade, and are, therefore, responsible for the efficiency of the brigade and the protection of property in the town, all questions which related to the increased efficiency of the brigade should come before them?—The hands of the Fire Brigade Committee have always been tied in the respect that they were not able to spend more than their annual income.

5250. But I suppose that upon finding a great improvement necessary, they might, even if they thought they were not entitled out of their finances to sanction it, apply to the general Board, and urge upon the general Board their view that it was absolutely necessary that funds should be provided for the purpose?—Decidedly so; and only within the last few days, last Friday week, the Fire Brigade Committee took up a recommendation to the Board to purchase a site in Southwark for a new head-quarter station; therefore the committee would and do take the initiative with regard to things which are wanted when the time arrives for them to take action.

5251. I wish to know whether really the committee had considered the question of extinguishing fires by any other system than the present water supply, that is to say by the chemical agencies which have been often suggested. Have the committee had any of these questions before them?—They have considered the question in connection with the other members of the Board at the Works and General Purposes Committee, but in any question which was specially referred to the Works and General Purposes Committee because of its magnitude, it would have been held irrelevant, I think, if I, as Chairman of the Fire Brigade Committee, had ordered it to be put upon the agenda paper of my Committee.

5252. That is not the question. You, as chairman of the Fire Brigade Committee, have the entire management of fire brigade matters?—We have.

5253. And your duty, I take it, is to see that the greatest possible protection is secured for the town against the danger of fire?—Yes, in connection with the sum which the Government has restricted us to the use of.

5254. But I understood you just now to admit that, supposing that sum were deficient, it would be your duty to go to the Metropolitan Board of Works in a case of emergency, and state the case to them?—That matter has been put before the Board, and, as I stated on Thursday last, I myself proposed a motion when the Consolidated Loans Fund Act was passing through, which would have relieved our funds of that expense, and have enabled us to spend what was sufficient for the purpose.

5255. But, as I gather from your answer, you consider that the efficiency of the brigade depends upon its being kept in proper condition, and you would recommend the extension of your financial powers for the purpose. Have you considered other schemes and other methods as bearing upon increasing the efficiency of your brigade, such as the use of chemical appliances, or the number of suggestions which are from time to time made for extinguishing fires?—We have had before us the inventors or patentees of an instrument called the "Extincteur," and we have referred the subject, as we refer all subjects of that kind, to Captain Shaw, and Captain Shaw has reported that he has not become convinced that they would be of material use in the extinction of fires. We have also had before us other matters. We had the question of a respirator for the men. We attended at our place upon the Grand Junction Wharf, where a cabin was fitted up full of smoke, and we saw this respirator experimented with. We saw a man who went into the smoke and remained there half an hour with one of Denayrouze's respirators over his mouth. We ordered some of those respirators to be purchased; they have been purchased and delivered to Captain Shaw, and yet Captain Shaw has not distributed them to the men, he not approving of them, and stating that he would not take upon himself the risk of their distribution.

Mr. *E. J. Thompson.*

26 June 1876.

5256. What I wanted to get at, which is certainly not unfavourable to the Metropolitan Board of Works, was this, that your committee had taken these various schemes into their consideration, with a view to seeing whether, by the adoption of any of them, they could practically increase the efficiency of the brigade?—The Fire Brigade Committee have always been desirous to increase the efficiency of the brigade in every respect they could, always bearing in mind the financial tie they were under.

5257. That seems to be a sort of stone hung round every one of your necks?—Yes, we could not emancipate ourselves from it; we trust we may become free at some time or other.

5258. Mr. *Ritchie.*] Considering the number of men, stations, and engines required for the brigade, has the committee had before it the original estimate of Captain Shaw, upon which the brigade was founded, as any kind of guide to the requirements?—Yes; I think you have that in Captain Shaw's own reports; I think Captain Shaw in his own reports has told you what he recommended to the Home Secretary.

5259. We have had that; but had the committee of your Board taken that as the basis to some extent of the requirements of the fire brigade?—I do not know that that particular scheme has been before the Board since the time when Sir George Grey treated with it.

5260. In considering the number of men required, you have not taken that estimate into account?—No; we have taken into account, from time to time, the possibility of making extensions, whenever our funds allowed us.

5261. But you have not considered it necessary to take that as your basis at all?—I do not know that I ever saw that scheme, and I do not see any particular cogency that we should take that particular scheme, because the fire brigade was instituted with certain forces, and spread over certain districts, and our work has been from time to time to lessen the distances between which the fire stations were, to increase the efficiency of the men, and to do whatever we thought just and right for the protection of the metropolis.

5262. Do not you know that the fire brigade was formed, and that the amount of money wanted was based upon an estimate given by Captain Shaw to the Home Secretary?—Sir George Grey modified that, and cut it down.

5263. I am speaking of the report upon which the 50,000 *l.* estimate was based; that was based upon a certain number of engines, stations, and men for London, was it not?—I was not a member of the Board then, but I take it the Board set itself zealously to work to carry out the scheme according to its best views of what was proper.

5264. Do you know whether you have more or less men, engines, and stations now than were provided for in that scheme?—I said that I did not remember seeing the scheme, but I know of their having 17 engine stations then, whereas we have 49 now.

5265. But you are going back to the time of the London Fire Brigade when you speak of their having only 17 stations; I ask you this: you say this estimate was formed upon the basis of a scheme submitted by Captain Shaw to the Home Secretary; I ask you, as Chairman of the Fire Brigade Committee of the Metropolitan Board of Works, whether the number of men, stations, and engines that you have now, is as much as that scheme provided for in 1867?—If that be the scheme which asked for 900 men, and the proportionate number of stations, I need scarcely say that we have not been able to go upon the consideration of the matter, because our funds would not have permitted us.

5266. Surely you, as Chairman of the Fire Brigade Committee, must know that that scheme for 900 odd men was only submitted in 1872?—I am told so now; since I was here on Thursday last, I have been told so; I had forgotten it.

5267. In what year was the fire brigade taken over by the Metropolitan Board of Works?—In 1865.

5268. What I ask you now is this: Is the brigade so strong now as Captain Shaw told the Home Secretary in 1865 it was necessary to be?—My answer to that must be, I think, that the Fire Brigade Committee have always done the best within their means for the protection of London from fire.

5269. That

5269. That is the old story; I have no doubt that is true?—The Fire Brigade Committee have increased the number of engines from 17 in 1866, to 39 in 1867, and to 50 in 1872.

5270. We are quite aware of the strength of the brigade just now, but what I wish you to answer me is this: You know you are Chairman of the Fire Brigade Committee, who have the control of the fire brigade. I ask you is the brigade now, in 1876, as strong as Captain Shaw told the Home Secretary in 1865 it was necessary to be for the safety of London?—It is impossible for me to say, because I do not know what Captain Shaw proposed at that time, but I am quite ure of this, that taking into view the consideration of the different values and cost of everything, we are in as good a state of protection as we possibly can be.

5271. The question which I am asking you just now is not whether you have done the best you could with the money. Captain Shaw, in 1865, told the Home Secretary that a certain number of men and appliances at the least were required for London at that time, taking into consideration the circumstances of the metropolis at the time. We know that London has largely increased since 1865. I am now asking you whether you are aware if the brigade is now as strong as Captain Shaw said in 1865 it ought to be?—But Captain Shaw might have asked for the brigade to be ten times as strong as was needed. I cannot possibly answer for what was recommended by Captain Shaw in 1865, seeing that I do not know. I have never seen the data, but if I had it appears to me, as a business man, it could not possibly have anything to do with the way in which the Metropolitan Board of Works has done its work within the past few years.

5272. *Chairman.*] I think the object of the question of the honourable Member is this: Captain Shaw having recommended a certain number of men, and a certain amount of material in 1865, which was supposed to be then necessary for the protection of the metropolis, whether the number of men so recommended then, when the scheme was turned into an Act, called the Fire Brigade Act, was in excess or under the number of men who are now in the brigade?—That is a question which I cannot answer, as I have not seen that scheme.

5273. Mr. *Ritchie.*] You are aware, I suppose, that originally it was not contemplated that the protection of life from fire should be undertaken with that sum of money which was originally granted for the protection of property?—No, that was added afterwards in 1867.

5274. At present, you have provided for what you consider the protection of London from fire, and also the protection of life, out of the money which was originally granted you for the protection of property?—Yes, no doubt.

5275. Now, you stated in answer to Question 5128, that in no sense of the term are the men overworked; you say, "Certainly, I quite endorse the view Mr. Freeman has expressed to the Committee, that there is a monotony about the occupations of the men, and although they are not in any sense, I think, to be regarded as overworked, yet, nevertheless, I think a little greater leave would be very desirable for them." I suppose you gave that answer based upon what you learnt from your own personal inquiries at the stations, that the men are not overworked?—Yes; I gave that answer from my own personal inquiries, and from travelling over London a good deal, and looking in at the stations. I generally found that unless a call for a fire occurred, there was not a large amount to do. I beg to say, in justice to the men, that nothing can exceed my sense of the zeal and devotion with which those men work when they are at a fire. I have seen them and watched them, and a more intelligent and worthy class of men I do not know. They go about their work promptly, efficaciously, and with a hearty spirit.

5276. That would be very satisfactory to the men to hear, because that is the testimony of everyone; but you did go about the stations with the view of finding whether the men were overworked?—With the view of seeing what the men were doing.

5277. And with the view of coming to a conclusion whether or not the men were overworked?—Yes.

5278. But you did not pick out the stations where the men were liable to be overworked?—I told the honourable Chairman that we went in a certain direc-

Mr. *E. J. Thompson.* 26 June 1876.

tion, because some remarks had been made with regard to one of those stations, but the same remark would have applied had we gone in another direction.

5279. Of course you are aware that stations in the centre of London are more likely to be heavily worked than stations in the outskirts?—Undoubtedly.

5280. But you avoided going to those more central stations, did you not?—On that day we did not visit them.

5281. Mr. Freeman also visited some stations?—He did.

5282. Do you know how many nights a week the men are supposed to have in bed?—We were told at one station that the men would be three nights in bed. At Paddington we were told that Smith, who was in charge of the station, would remain in the station 12 hours; the men coming off duty at six o'clock a.m. from the escapes, would go on at eight o'clock at night.

5283. They would go on to the escape duty again?—They would be doing nothing in the interim except cleaning up the place, unless a call to a fire took place.

5284. Do you know how long it takes to clean up the place?—We were told that the men came off duty at seven in the morning, and that it takes them until 11 o'clock or 12 o'clock. Now, if a man of business had three or four men cleaning up his place, which was not half the size of this room, all those hours, it would simply ruin him.

5285. Do you know what they do?—They clean up the engines, and the whole of the place is cleaned and swept up.

5286. But you are talking about the part of the house in which the engines are kept, which you say is cleaned up, namely, the engine-room; what I say is, that the engine-room does not go to a fire; it is the things which go to a fire which require the most cleaning?—In the event of a fire there would be extra labour, of course.

5287. There would be the cleaning and greasing of the hose?—Yes; at stations where they have many calls, the labour, no doubt, differs from the labour at the stations we visited.

5288. In point of fact, you did not go to any of the stations where the work was likely to be heavy; I do not say that you did so designedly?—I trust we did not go in any direction, or refrained from doing so, because we thought one way or the other.

5289. *Chairman.*] It accidentally happened so?—Those are not small stations.

5290. Mr. *Ritchie.*] But I am talking about the working stations; you say there are stations where the work is very much heavier than at the stations where you went to?—There are stations where the calls to fires, and engines going to fires, must be much heavier, otherwise the average of fires could not be sustained.

5291. What I say to you is, that you did not go to those stations?—We did not.

5292. We have had it in evidence from the men themselves, and from their officers, that when a man loses his night in bed, it is never made up to him again?—I think that is so.

5293. So that it may sometimes happen that a man may be on duty for a week without being in his bed?—Yes; but I think that the men who are out on escape duty at night might certainly or generally be permitted to go to bed when they come off escape duty.

5294. Then they are wanted to go and do this cleaning?—Under Captain Shaw's regulations they are. I very much doubt myself whether all that cleaning, and all that polishing up, need be done every day.

5295. Do you know whether Captain Shaw has ever made any alteration in his regulations in that respect since the force was under the old fire brigade?—I do not know.

5296. Still you have confidence in Captain Shaw?—As chief of a force necessary to be led into action, if I may use the term, at any moment, I have every confidence in him.

5297. But

Mr. *E. J. Thompson.*

26 June 1876.

5297. But with regard to discipline and labour, you differ somewhat from him?—I think sometimes his discipline might be relaxed somewhat.

5298. You think if Captain Shaw errs at all it is in the direction of his discipline being too strained and tight?—I do.

5299. Still you think an officer in his position should be entrusted with the details of discipline entirely?—I do; at any rate he has been.

5300. When a man has been on duty at a station, and he can lie down, Mr. Freeman told us that he might just as well be in his bed, because he can lie down and have blankets to cover him. Of course you know that there are stations in which there are likely to be more calls than in the stations you visited; that the probability of the telegraph bell ringing is much greater?—Yes.

5301. And that a man who is lying down would be always liable to be disturbed, and to have to jump up when the telegraph bell rang?—He might be disturbed.

5302. Did you receive a letter as Chairman of the Fire Brigade Committee from a man named Wheeler?—Yes, I read it to the Fire Brigade Committee.

5303. He complains, does he not, very much of the amount of work?—Yes, that was a letter addressed to me before this Select Committee was moved for. I read it to the Fire Brigade Committee. I remember its contents; it was not entered upon our minutes, nor was there any resolution taken upon it, but I answered it by saying that I had received it, and congratulated him upon getting so excellent an appointment as that of head of the fire brigade at Ipswich. In that letter he complained very much of the treatment which he himself and others had undergone in the Metropolitan Fire Brigade. He said it was only a school in which the men would remain so long as they were being taught, and that then they would seek to leave. Now I did think that considering our school had enabled that man to take a very superior position in life to what he had previously filled, it was an ungracious letter for him to have written, and I felt it to be such a letter as a man with a grateful mind would not have penned.

5304. You say that he received a very superior appointment when he left you?—I asked Captain Shaw what the appointment he was going to was, for I knew nothing more than Captain Shaw told me. Captain Shaw's answer was, "He has gone to be the head of the fire brigade at Ipswich, and he will have 200 *l.* a year.

5305. Then he was in an independent position with regard to the Metropolitan Fire Brigade when he wrote that letter?—Yes, to that brigade which had given him employment and inured him for promotion.

5306. So that the only reason he could have for writing the letter would be, to endeavour to point out some of the inconveniences and hardships which his brother officers would have to endure, not that he should derive any benefit from any change himself?—I thought that if I were in his place it was not a letter I should like to have written myself.

5307. Was Captain Shaw asked whether the statements in that letter were exaggerated or otherwise?—I do not remember that I made any appeal to Captain Shaw on that head. Captain Shaw was present when the letter was read.

5308. You say that you would be in favour of an addition of a certain number of men, in order to give a certain amount of leave?—I should like to see the men have one day's leave a fortnight. I think, practically speaking, the men get that leave now, because at one of the stations, at Kensington, it came out that the men got, last month, 28 hours' leave each, and leave under six hours is not entered as leave. The station master gives leave up to six hours. I may be wrong in saying it is not entered, but I take it that it is not entered; but even if it be, the statistics of Kensington station show that during the month of May this year the men have had what amounted, on an average, to 28 hours' leave during that month; and I say that a very slight addition would make it 24 hours a fortnight right off, they being paid for the 14 days' labour.

5309. That, of course, as you say, was an out-station?—It was the Paddington Station.

Mr. *E. J. Thompson.*

26 June 1876.

5310. And Kensington station; they are both outlying stations?—They do not lie at Charing Cross or at the Mansion House, of course.

5311. You do not know that the same thing takes place at the Charing Cross or the Mansion House stations?—I have not had a return of the amount of leave at those stations; but I know that the officer in charge of a station has the power of giving six hours' leave at any time, without reference to any higher authority.

5312. Did you state by how many men you thought the brigade ought to be increased?—I think that considering, as I do, that these 28 hours per month, or 14 hours per fortnight, should be increased up to 24 hours in the fortnight, the increase necessary under that head would be about 60 or 70 men.

5313. That would only relieve what you call the monotony of their employment?—That would relieve their labour so far that it would give each man a clear 24 hours off duty every fortnight.

5314. But still there would be the liability to complain of the over work which they have already complained of, and the 60 or 70 men which you have spoken of would not remedy that?—I think if the men were appealed to they would say that the over work would be very much met if they had a relief of that kind.

5315. Still it is in the direction of relieving their monotony that you say 60 or 70 men are required?—Yes, to give the men all the leave I should like to see them have.

5316. You do not take into account, in the 60 or 70 men which you recommend, any increase to the head-quarter station?—The increase to the head-quarter station, if we are enabled to establish it, will be very little. There would be some men, of course.

5317. Mr. Freeman told the Committee 40 men would be required for that?—But he forgot that we have already 15 men out of the 50 at Watling-street. We have 16 men in the instruction class on the Grand Junction Wharf. They will form a portion of the 50 men to go to the new station. We have four men at the workshops in the Waterloo-road. It would be intended to transfer the men from the Southwark-street station to the Waterloo-road station, therefore those four men will be relieved, and we should therefore have 35 of our men either at the head-quarter station, or transferred to it, and 15 new men if they were wanted would make up the complement.

5318. Now with regard to the danger to London of the small number of men available at night; do you know what the average number of firemen available at night is?—No; I heard it stated by Captain Shaw as being 112 men.

5319. Do not you get Captain Shaw's annual reports at your committee?—We have his annual reports.

5320. Do not you know that every one of Captain Shaw's annual reports states the number of men available by night and by day?—I have no doubt of it, but I have not got it in my head. I believe all those papers have been handed in.

5321. I have Captain Shaw's Report for 1875, in which he shows that the number of men in the brigade being 395 altogether, deducting the 181 who are on watches at night, and 45 sick and on leave, making together 226, that gives a balance of 169 men available at night throughout the whole of London?—Yes; I have no doubt that is correct.

5322. Captain Shaw has told the Committee that this number is much too small; I suppose you are not prepared to dispute what he says on that point?—I think the force must be judged from its labours in that respect.

5323. And not from its liability to be called upon?—The force is no doubt liable to severe strains of calls at times, but the result of its work proves that it is equal to its work, because year by year the number of serious fires is diminishing, and the number of fires is not, I think, increasing more than the population is increasing.

5324. The number of fires is diminishing, but your brigade has considerably increased, of course?—Our brigade is larger than it was in 1866, but the town is a great deal larger also.

5325. That shows, therefore, that you ought to have a very much larger brigade?—I have always held the opinion that it would be desirable that the Board should be in possession of more money for fire brigade purposes.

5326. Did

5326. Did Captain Shaw ever bring before the committee the small number of men that he has available at night in the case of large fires?—I do not remember of late his having brought before us any report of the kind. I stated, in answer to the honourable Chairman, that Captain Shaw knew as well as the committee did the state of our funds, and that every pound was spent.

5327. With regard to the fire at Brooks' Wharf, have you the particulars of the number of men employed there?—No; I had it on the paper to ask Captain Shaw what number of men were there, but I have not been able to see him. I was at the fire myself, and saw a great number of engines and a great number of men there.

5328. Would you be able to say what number of men were left in the metropolis?—I know that another fire occurred on the same evening which was speedily attended to.

5329. Where did the men come from who attended at that fire; were they not sent from the Thames-street fire to it?—I had that question to ask Captain Shaw upon the subject, but I have not been able to see him.

5330. Then I perhaps had better not pursue that subject; you do not know whether there were any stations closed that night at all?—I do not know that.

5331. You say as I gather that the Board would have done more if they had not been hampered for money?—No, what I say is that I personally have always desired that the fire brigade should have more money. If the Board itself had desired that, no doubt we should have applied to Parliament or the Government for its sanction.

5332. I thought you said that the Board would not adopt the recommendation of your committee, that more money should be obtained?—I said the Board have not done so else we should have been before Parliament or the Government upon the matter.

5333. At Question 4894, an honourable Member asked Mr. Richardson: "In fact that the odium to be thrown should be cast upon somebody other than the Metropolitan Board of Works." To which he replied: "Certainly, that is just the question; there must be an odium, and why should we, the Metropolitan Board of Works, throw the expense upon the ratepayers, and bear the odium ourselves; is that the principle which guides the Metropolitan Board of Works?—That was upon the question of increasing the water supply and establishing hydrants.

5334. Before coming to that question, an honourable Member asked with regard to the constant supply of water, and the reply is that it would put the owners of property to a large expense, and the question is directed as to whether there was any odium likely to arise to the Metropolitan Board of Works in consequence of putting the people to this expense, and the reply is: "That is just the question; there must be an odium, and should we, the Metropolitan Board of Works, throw the expense upon the ratepayers, and bear the odium ourselves"?—With respect to that question of the water supply and the use of hydrants, "I beg to say that our engineer, Sir Joseph Bazalgette, will follow me, and he will be best able to explain to the committee what the cost and the remedy for that is to be. With respect to the question of odium, all I can say is that I should not have used the word. I daresay if Mr. Richardson were here, he would explain the sense in which he used it.

5335. At any rate you do not think it is a sufficient reason for the Metropolitan Board of Works not carrying out what they think is right, because they would be likely to incur odium?—I do not think the Metropolitan Board of Works, if you look at all their works, have ever refused or neglected to carry out anything they considered to be for the interests of the metropolis when the field lay clearly before them.

5336. With regard to a superannuation scheme, you yourself, I think, prepared one, did you not?—I am very glad you have asked me that question, because it will enable me, the matter having been referred to before this Committee, merely to say that the scheme I drew was based entirely upon subscriptions from the men, because I felt at the moment there was no likelihood of any other scheme being carried, and I felt also that it was the instruction given by the Board to its committee, the men having said in their memorial that they were desirous or willing to subscribe to a scheme of that sort, and I based my

Mr. *E. J. Thompson.* 26 June 1876.

scheme, therefore, entirely upon the subscriptions from the men. It was withdrawn by me directly I came into contact with the men on the subject. I first submitted the scheme to a sub-committee of the Works Committee of the Board, and I asked that I might be permitted to see the men upon the subject. I saw the men upon my own responsibility. My scheme involved that all the subscriptions of the men to the savings fund should be transferred over to the superannuation fund, but I found when I came to speak to the men that their savings were so unequal that it could not be carried out on that basis. Mr. Richardson showed the committee in one direction how they were unequal, some men having subscribed and saved in that fund more than others.

5337. But it was a scheme based upon the men's contributions, and upon them only?—Entirely.

5338. You are quite in favour of there being a superannuation scheme?—Quite so.

5339. Do you think that it would be a fair basis to take for a superannuation scheme any scheme which might be decided upon for a somewhat analogous service; that is to say, of the police?—My own scheme was made, as nearly as possible, upon the footing of the scheme for the City police. The City police number, as nearly as possible, I may say, twice the number of our men, and having written to Major Bowman for information, I made my scheme very much the same as his.

5340. I do not want to go into the whole detail. I ask you, do you think it would be fair to take the basis of a somewhat analogous force, that is to say, the police?—My own scheme was framed chiefly upon that of the City police.

5341. Then I may take it that you do think that that was a fair basis?—I thought my own scheme would be a very fair one, and I think the scheme which the Board resolved upon and issued to the men was a very fair one.

5342. Sir *Henry Peek.*] I understand that you are strongly of opinion that the insurance companies should pay more than they do?—If the ratepayers pay more, I think that they should pay a little more too.

5343. And you disagree with Mr. Freeman, who thinks it is the duty of the municipality to provide for protection against fire?—I think it would be the duty of the municipality in places in the country, but certainly not in a place like London, where such a large amount of wealth is centred, the ratepayers having no common interest with that, and the insurance offices having such a large interest in it.

5344. Do you think it right it the insurance companies paid more than they do at present that they should still continue without any direct representation on your committee?—I cannot see where would be the use of any other representation upon the committee than that which they have. I am sure that the members of my Board would be very pleased if gentlemen representing fire insurance offices, became elected to our Board for their respective districts. I think I may say that the Chairman of our Board is a fire insurance director, and another member of our Board has lately been elected one, and we should hail with pleasure such gentlemen coming among us; but our committee has to report all its proceedings to the Board, and therefore anyone who has a right to take his seat at the committee could not by any possibility follow that by taking his seat at the Board to advocate there what he had advocated at the committee, therefore I do not see where would be the use of having representatives of the fire insurance offices at the committee.

5345. But do not you think it quite possible that the interests of fire insurance companies might be very different from the interests of the community at large?—I do not see upon the question of fire how it is to be different.

5346. One witness told the Committee that the duty of the Metropolitan Board of Works was to protect the entire metropolis; it appears to me that the duty of the fire insurance companies is to protect from fire those parts of the metropolis where so large an amount of insurable goods is deposited, and therefore, as one of the witnesses told the Committee that your committee shut up stations without consulting anybody, I cannot prevent myself from thinking that the fire insurance companies, which during 11 years have paid 167,000 *l.* to your 426,000 *l.*, should have a voice. What do you think with regard to that?

that?—It seems to me that the question of closing a station would not be able to be dealt with from a mere insurance point of view, because it is the duty of a municipality, no doubt, to protect, as well as it is able, all alike; but with regard to that very question of the transfer of the stations, if I am asked to state what was needed with regard to the transfer of the Farringdon-street Station, I should say that there was no fire station between Farringdon-street and Camden Town; there was no fire station between Holborn and the Essex-road. Now the area lying between those districts comprises the whole of Clerkenwell; and large portions of Islington and St. Luke's would also be within it; Clerkenwell is the entire seat of the watch manufacture of the kingdom, and I might almost dare to say, of the world. It is a place where a great number of wholesale jewellers follow their occupation, and the insurance offices must derive a large amount of insurance from the property in Clerkenwell, yet that property was without any adequate fire protection. Now, by moving the station from Farringdon-street, which was a poor old station, where fever constantly dwelt, and the men were afraid to live; by moving a little higher, and erecting a first-class fire engine station there, we have not only been able to cover ground which was previously entirely uncovered, but have been able to afford to the districts around Farringdon-street as much security as it ever enjoyed; and in proof of that, I beg you will allow me to read a little extract from the "Times" of 22nd May 1876, which states, "At 9 o'clock last evening a fire broke out on the premises of Mr. Treloar, cocoanut and other mat manufacturer, Ludgate-hill. The fire broke out in the upper floor, in the occupation of a law stationer; three steamers and two manual fire engines were soon on the spot under Superintendent Bridges, and the fire was extinguished at half-past 9." Now that is just the part that the old station would have covered, and it shows that from the new station it has been so well covered that within half an hour the fire had been put out, and therefore I think I may fairly assume that the Farringdon-street Station was transferred wisely and well.

5347. But that station was transferred against the opinion of Captain Shaw, was it not?—We have no opinion of Captain Shaw on record on the subject, but I do think it fair to him to say, as far as my memory serves me, that he told me that he objected to having the station transferred; that he thought it very useful to have a station of some kind remaining in Farringdon-street, and I am sure we should have continued a small station there if we had had the means.

5348. Am I right in saying that there are fewer stations now in the neighbourhood of the docks than there were 11 years ago?—I do not know that that can be so; I only know that the station in Wellclose-square has been transferred again, under somewhat similar conditions to the Farringdon-street Station, to near Whitechapel and Commercial roads, where we have erected one of the finest stations in London; with a look-out on the top of it which extends over many miles of houses, and with good wide roads running from it in all directions, and I think Captain Shaw himself allowed in his evidence that the difference of time in which an engine would reach the neighbourhood of the docks from the time it would reach from the old station was very small indeed. I know that with regard to the station we wrote a letter to the dock authorities. I had lived in the neighbourhood of the docks some years of my younger life, and I know pretty well the position of things there; I said I thought that the London Docks used to have a large bit of uncovered land at the entrance to the docks, and that it would be well to write to the authorities to see if they would let us have a little plot of that ground that we might have a small station upon it, and we got from the dock authorities a reply that they had no land to give. We instructed Captain Shaw to see if a place could be got in that neighbourhood for a small station to be put, and the committee, and the Board I would say, would place a small station in the neighbourhood of the London Docks whenever they had an opportunity of doing so.

5349. But, I suppose, although the London Dock Company had no land to give, they had land to sell?—They did not seem to care to enter upon the question. They have their own engines in the docks, and, generally speaking, when the dock gates are once closed, they do not care to open them, even to the fire engines, if they can help it.

Mr. *E. J. Thompson.*

26 June 1876.

5350. The dock companies live by rates upon goods, do they not?—The dock companies live by rates upon goods.

5351. And for the purpose of those rates they maintain their own fire engines?—They did when I lived in the neighbourhood, and I doubt not they have them now.

5352. A moment ago you were talking about goods, saying that practically goods paid nothing, but at any rate the goods in the docks pay indirectly through the rates for the cost of the extinction of fire?—We do not charge our rates upon the goods at any time. We charge our rates upon the buildings.

5353. If I understood you, what you stated was this: that the houses paid, but that the goods did not pay in anything like the same proportion?—I stated that the goods did not pay to the rate at all.

5354. And, therefore, that they should pay?—I think the insurance offices should pay, seeing they have a revenue from the goods. I would not put it as high as Mr. Richardson did, that they became the owners of the goods, because if they became the owners of the goods, all other owners of goods in the metropolis should be equally liable, but seeing that they derive revenue from the goods, it seems fair that they should contribute.

5355. But if the dock companies keep up fire extinguishing appliances, and charge upon those goods at a fair rate, those goods would pay in that way?—The dock company, as far as I know, may not insure their buildings, and may keep up their fire extinguising apparatus for the protection of their buildings.

5356. You said that the goods paid nothing?—Not to the rate.

5357. Therefore it was fair that the insurance companies should pay more, but it appears to me that the insurance companies keep up at their own expense independently of your Board a salvage corps which helps the fire brigade, and that the expenses which the docks are put to for fire extinction falls indirectly upon the goods in the shape of being included in the rates which those goods pay?—I have never understood that the salvage corps helped our fire brigade at all. I think the evidence went to show that it was merely that having nothing to do, they might turn a screw or lay down a bit of hose, but I have been at many fires and have never seen their men at work with our men. I have no doubt that they are as good a lot of men as go to fires, but their duties lie in another direction.

5358. Sir *James Hogg.*] When the committee was going round a little while ago for the purpose of taking a tour, had you any idea of where you were going to?—We did not settle where we were going to till the moment of going.

5359. So that there was nothing pre-conceived at all?—No.

5360. I think that when the Board, at the recommendation of the Fire Brigade Committee, shut up any stations, there are always, or generally speaking, other stations placed of a better and larger character than those which are shut up?—The only two stations we have entirely closed are two very small ones, one at South Hackney, and one at De Beauvoir Town. The one at De Beauvoir Town was in a place something like an old stable; I do not know whether it had been the old parish engine house or not, but we have built a short time since a first-rate station at Shoreditch. Now Shoreditch station is close to the Kingsland-road, which is a wide road, having a clear way to De Beauvoir Town. On the other hand we have built a station in Essex-road, Islington, which gives access by many wide roads to De Beauvoir Town. De Beauvoir Town is very well covered indeed. I have the happiness to have property in De Beauvoir Town, close to where the fire station was, and I never felt the slightest uneasiness from the closing of that station. I thought we were bound to close a little station like that when larger ones were provided in the immediate neighbourhood; the station at South Hackney followed suit in that direction; the ground had been covered, and I should say that we would ten times rather place an additional station at Farringdon-street or the docks, than another at South Hackney.

5361. With regard to the Wellclose-square station, there was a good deal of investigation, was there not, before that station was closed?—There was a good deal of investigation. The station was in a most awkward position. Nothing could be said for it, except that it had been there a good number of years. Wellclose-square is a square of which the diagonal corners are courts. There is one opening from Ratcliff Highway, and another from Cable-street. My

own belief is, that it would take an engine as long to get out of the angles of Wellclose-square as it would take it to run from the new station altogether.

5362. Therefore, the district is better protected than when the Wellclose-square station existed there?—Nobody has complained of it since it was closed.

5363. Mr. *Hayter.*] What increase upon the halfpenny rate do you recommend?—If I might get my own view recommended and carried, it would be, that the Board should be left with the fire brigade to do as they do with their other larger matters; to do what in the conscience of the Board was right, and spend the amount of money which they believed would be sufficient. I would neither make it a three-farthing rate nor a penny rate. I would leave their hands free. If, however, it was determined upon the part of the authorities that some limit should be placed upon the rate, I think that an additional farthing added on to the rate, and those additional subscriptions from the insurance offices, would form a sum quite sufficient for the wants of the metropolis at the present time.

5364. What increase in the number of men would be required to give every man one day in a fortnight leave?—I have reckoned it roughly at from 60 to 70 additional men, but at some stations where there are 10 or 12 men employed it might even travel to a little more than that, but I think that if you come to divide the 70 by the 400 men we have, you would find that it would be more than sufficient to give each man one day a fortnight.

5365. Do you think that that is the most popular plan with the men?—I am not aware that the men have ever broached the subject; I am not aware that I ever broached the subject until I did so in this Committee.

5366. Then why do you recommend it?—Because I think it is a fair leave for them, seeing that they are men who work seven days a week, and get seven days' pay, because I saw in Manchester, when I was there, that the men had a day in a fortnight leave, and seemed to be quite satisfied with it.

5367. Mr. *Hankey.*] I think I understood that you considered that all property in the metropolis ought to contribute towards the protection of that property against loss by fire, quite irrespective of whether such property is insured or not?—I think with regard to buildings that should be so.

5368. But my question relates to all property?—I have endeavoured to steer clear of confounding goods with buildings; my belief is that buildings, which are the common rateable valued property of the whole of the inhabitants, should be liable to the rate; whether they should be liable to a rate beyond the purpose of protection of the buildings is a question which I leave for your consideration; I think that goods should pay in some sense, but not by rate.

5369. I understand that if a man has, say, 10,000 *l.* worth of property in his house, you think that he ought to pay a certain tax for the protection of that property quite independently of the rate he may have to pay as a householder for the maintenance of the fire brigade?—I have not dared to broach an opinion of that sort, because if that could be carried out it would be necessary that such large machinery should be created for its collection, and it would become so invidious that I cannot see how we are to derive any benefit from goods except through the insurances, and the offices which contribute proportionately to the amount of goods insured by them.

5370. You think that if a man chooses to insure, the insurance company ought to stand in his shoes, as it has the power of charging an increased premium for that insurance?—I should think that just.

5371. But if a man does not choose to insure, how are you to get his share of a rate for such purpose relating only to his goods, which are not assessed for rates?—It would be impossible to get at a man who did not insure, and my only answer to that would be, that the sun shineth upon the evil as well as upon the good.

5372. Should you consider it advisable for Parliament to interfere by obliging every owner of property to contribute, either through an insurance office or otherwise, towards the protection of his property against fire?—I do not; I do not think it would be politic upon the part of the Government to say to a man, "You shall not stand as your own insurer if you please?"

5373. But I thought you stated that you considered the question of pro-

Mr. *E. J. Thompson.*

26 June 1876.

tection from fire as a municipal question?—So far as buildings are concerned, certainly.

5374. Do you know any town where the owners of goods are chaged municipal rates independently of the property usually subject to municipal rating?—No, but this must be an exception, I think?—The fire insurance offices derive such large benefit from the protection the fire brigade affords them, that it does seem to me to be fair, especially in places like London, Liverpool, Bristol, or Manchester, that they should contribute something towards the rate.

5375. Do you think it fair that a man who has property should, if he insures, pay, by an increased premium, a certain proportion of the expense towards the fire brigade, but that a man who is not insured should pay nothing for the same description of property?—I could not look at the answer which I should give to that question without a little explanation. It certainly does seem to me that fire insurance offices should pay. It does seem to me that there would be no difference whatever in the rate of premium whether they paid or not. It is so small in comparison with the incoming of the fire insurance offices.

5376. Have you any information before you with reference to the income of the fire insusance offices?—I was going to say that if the whole of the 540,000,000 *l.* of property insured were insured only at its lowest rate of 15 *s.* per 1,000 *l.*, it must produce nearly half a million of money. I take it that the rate all through, and especially for goods, is much larger than that; and although I cannot make the calculation, and the fire insurance offices only can, my belief is that the revenue from fire insurance produces over 1,000,000 *l.* a year.

5377. But you have no special information with reference to the profits of the fire insurance offices?—The revenue must be a fact; what the profits may be after they pay for their losses I cannot tell you.

5378. The revenue may be a fact, but until we know what the losses are we can form no opinion with reference to what amount they could afford to pay for anything?—I saw that the Royal Exchange Fire Insurance Company the other day divided a 20 per cent. dividend.

5379. Mr. *Stewart Hardy.*] Then the fact of the matter is, so far as the question of insurance is concerned, that you entirely differ from the last witness. You consider, as I understand, that the insurance companies pay for themselves, whereas Mr. Richardson said that it was merely a convenient way of reaching the property which was insured?—My opinion is that the fire insurance offices should pay, and that if the rate upon the inhabitants is increased their rate should also be increased.

5380. Mr. Richardson said that whatever the insurance offices paid, it was not, in fact, paid by the companies, but was merely collected from the owners?—Mr. Richardson said that the fire insurance offices in some sense represented the owners.

5381. But the point he put was this: that any payment made by the fire insurance offices was, in fact, recovered from the people who insured; that it was not a payment made by the companies, but that it was only a more convenient mode of getting at the portable property which was insured?—I do not go upon what may be right or wrong with regard to the collection of contributions upon goods; but the fact is that the insurance offices have been under statutory obligation for ten years with regard to some contribution, and it seems to be quite fair that if the ratepayers were asked for more, their contributions should also be increased.

5382. I only wish to put this: It strikes me that there is a larger question involved. If you believe that the insurance companies pay for the advantages which they receive, you do not raise this large question; but if, on the contrary, they are only the collectors of money from the people who insure, the same would apply to the police and prisons' rate and every rate throughout the metropolis under which property is protected and not life, and that personal property should pay to all those things. In fact, the question has often been raised by the House of Commons whether or not, in all cases where property is protected, the property should pay?—In that sense the law is under no obligation to protect other property than that upon which the rate is paid; but as they do protect other property, it is quite clear that that other property should pay.

5383. You

5383. You have said nothing about the water supply, but even if we were to agree with you that the laying down of hydrants throughout the metropolis would be a very large and unnecessary expense, do not you think that the Metropolitan Board of Works, after the reports of Commissions and Committees, ought, in the case of new mains and new property, to provide hydrants on the mains?—I have endeavoured to look upon the subject from a business-like point of view, and I cannot come to any conclusion other than that if hydrants existed all over London, we must keep up our present force in order to enable us to cope with a fire like that at Brooks' Wharf.

5384. My question was not whether you should put hydrants all over the metropolis, but whether, under present circumstances, in the case of new mains laid down, and in the case of very valuable property being stored, in those cases, at all events, you ought not to provide hydrants even now?—I think it would have to depend very much upon what pressure was behind the water, and I feel myself that in London, and I believe you will find from the evidence of our engineer, Sir Joseph Bazalgette, that it is impossible at present that the necessary pressure can be obtained.

5385. But, in your view, it does not depend in the least upon pressure; in the view of those who depend upon getting rid of the engines it would depend upon pressure, but your view is that you would have to keep the engines; but is not a hydrant a much more convenient way of getting at the water at once in cases where there is valuable property stored, even keeping your present appliances?—I stated to the honourable Chairman that hydrants would undoubtedly be useful, the only question being whether the saving would repay the outlay.

5386. Therefore, because you think the saving would not repay the outlay in the case of laying hydrants all over the metropolis, you think it will not be necessary to take any step in the matter?—We are going to lay down hydrants in Northumberland Avenue, and we are going to have hydrants laid down along Shoreditch, where we are making one side of the street new, and I think that that will be the best way of testing the usefulness of hydrants, and not to put them down over the whole of the metropolis, but to put them in places where they are likely to be useful, and see what is the result of it. My own opinion is that you will find that they will not save one pound in the expense of engines, or horses, or men, and other matters which now go to make up the total of expense.

5387. Do not you think that the Board would do as well to put down hydrants in streets where there are houses on each side, and which are not in prominent positions, as to lay them down in Northumberland Avenue, where there are no houses on either side, but which is a part of London which they are able to talk about?—Northumberland Avenue will no doubt shortly be covered with some of the most magnificent buildings in London; that is the expectation of the Metropolitan Board of Works.

5388. Mr. *Forsyth.*] Do you mean that shops will be erected in Northumberland Avenue?—It is no intention of our Board to let the ground in the Northumberland Avenue at a mere shop value. We hope to get for that ground far exceeding anything which mere traders could pay for land.

5389. Mr. *Stewart Hardy.*] You are glad to say that since 1871 you have actually put down hydrants in Northumberland Avenue?—I am.

5390. Mr. *Young.*] I understood you to state that you think the fire insurance offices ought to pay more money than they do?—Yes, if the ratepayers do.

5391. That is in respect of your not being able to get at the personal property insured, is it not?—It would be impossible for us to get at the personal property; the town would not endure it.

5392. That would put the burden of protecting property uninsured upon the fire insurance offices, would it not?—No; because Captain Shaw has stated that one-third only of the property (I take that to be of all property) is insured. I take it that the municipal duty is to protect all buildings. They receive rates from all the buildings, and they should protect all the buildings.

5393. Then we will say there are so many millions of goods uninsured. The offices of mercantile business have no more to do with that than I have. Still if you raised their subscription it must be to some extent in consequence of people

Mr. *E. J. Thompson.*

26 June 1876.

who are getting their goods practically protected without paying anything for it?—Yes, but the ratepayers pay upon all buildings, whether they are insured or not.

5394. Mr. *Hardcastle.*] I think you stated that Captain Shaw was consulted about all the details of the management of the men?—Captain Shaw is always present at every meeting of the Fire Brigade Committee. Indeed, I think I may say during the two years that I have been chairman, Captain Shaw has not been absent more than once, unless in the vacation time.

5395. The detail of discipline and the management of the men you consider to be left to Captain Shaw?—I found it to be in his hands, and it has been in his hands from the time when I first came to the Board.

5396. And it is in his hands now?—It is in his hands now.

5397. Will you explain to me how it was that when the Board chose to order patent respirators for the men, they did not first ascertain whether Captain Shaw would allow the men to use them; that looks to me as though these details were not left so much to Captain Shaw as has been represented?—The question did not arise; Captain Shaw did not tell the committee that he would not allow their use.

5398. Was not he at the Board?—He was present when the resolution was passed, and he did not say that he would not have them used.

5399. You declined to admit that the men were overworked in the ordinary sense of the word, but you thought that what the men did complain of was more in the nature of enforced idleness?—The testimony of the man Morris himself goes to that.

5400. You state that you think that 60 or 70 additional men should be immediately added to the fire brigade?—I think that about 60 or 70 additional men will enable each of the men to have a day's leave once a fortnight, and provide the men which Captain Shaw requires for the new head-quarters station.

5401. Would 70 additional men be sufficient?—We should not raise any question whether it were 70, 80, or 100 men.

5402. But I understood you to state that about 60 or 70 additional men would be enough for the present working of the brigade, without opening up the future?—That raises up a different question. My opinion is that London ought to have more stations and more men, but we must have more money to do it with. What I wanted to convey was that in order to give the present men one day in a fortnight leave, it would be necessary to have about 70 additional men.

5403. You say that for the proper supply of the present number of stations you think that from 60 to 70 men should be added?—I think so.

5404. But that there ought to be a considerable number of additional stations opened in London?—My opinion must be that to be consistent, because I have always sought for more funds.

5405. Will you tell me how many more stations and how many more men are in your opinion required at present?—That subject in detail has never come before the Fire Brigade Committee, nor have I had it in my own mind. When we are able to deal with it being in possession of a larger revenue it will receive every attention I am sure from the members of my committee.

5406. Mr. *Forsyth.*] Do you know that the Temple is supplied with a great many hydrants?—I do not know that.

5407. At the expense of the two Temples?—I do not know that.

5408. You have frequently stated that if you had the power of raising more money you would spend more to increase the efficiency of the fire brigade?—Yes.

5409. I want to know this; at present you are limited to a halfpenny rate; now, suppose the rate were increased by a farthing, so as to make it a three-farthing rate, would that, or would it not, in your opinion, be amply sufficient for the purpose?—It would be an increase of about 25,000 *l.* a year, but I do not think, whatever the increase may be, that the ratepayers should bear it all.

5410. That is another question; first of all as regards the efficiency of the fire brigade; do you think, from your knowledge of London generally, and of the operations of the fire brigade, that an increase of 50 per cent. upon the present

present assessment would be enough for your purposes to make the fire brigade in your opinion thoroughly efficient?—No; I am in hopes that if the ratepayers have an increase of a farthing put upon them, the insurance offices will contribute something, and that the Government will be pleased to give us something more too.

5411. Suppose, for instance, that the fire insurance companies paid no more than the 35 *l.* per million, and the Government did not increase their contribution, you would still get by that additional farthing assessment an additional 24,000 *l.* or 25,000 *l.*, would you not?—Yes.

5412. Will that sum, in your opinion, be sufficient to enable you to increase the fire brigade to the extent to which you think it requires to be increased?—Not having gone into any of the details upon the matter, I should not at the first blush be able to answer the question, but it would be a very large sum in addition. I would rather myself that the rate should be made a penny, and the other contributions correspondingly larger, and then I am sure we should have plenty of money for a generation to come.

5413. And your opinion is, that whether by compulsion or agreement it would be right that the insurance companies should contribute more than they contribute now?—Yes; because for one reason everything is so much dearer than it was when the insurance offices agreed to contribute 35 *l.* per million; and then again the amount of property insured by them which we protect is also so immensely larger.

5414. Mr. *Locke.*] With regard to the insurance companies, why should they pay anything at all: what they have to do is, if a house is burnt down, to pay for it; who suffers by the fire; is it not the insurer?—I have endeavoured to lay down for my own opinion that the ratepayers are municipally bound one to another in proportion and in respect to the rate they pay for their protection. If the Board is bound to act for the owners of goods, then I think it fair for those who derive benefit from the insurers of goods, that they should pay something to the body which protects them from fire.

5415. The person who does that has a certain sum of money paid him for doing it, does he not?—Yes.

5416. And he receives a certain sum of money to replace the house or property which is burnt?—Yes.

5417. Why should he do anything else than that; who is the person who loses if a fire takes place?—If it were not protected the insurance offices would lose immensely.

5418. Then, is it not right for them to do as they please; if they chose to lose immensely have they not the right to do so?—But should not the ratepayer, on that assumption, be entitled to lose if he pleased, and not to be called on to pay the rate?

5419 Is not a man allowed to be a loser if he pleases?—If a man were asked if he would rather pay the rate or not, he would very often rather go without the protection.

5420. But what I understand you to state is, that there should be a law made to insist upon persons who are insurers giving a certain sum of money whether they like it or not?—The ratepayers are obliged to pay whether they like it or not.

5421. But that is no reason why the insurers should pay?—There seems to be a statutory obligation upon all parties all round, and I hope that view will be taken by the Committee.

5422. Are you aware that a great many fire insurance offices before the new alterations which have taken place never had appliances to put out fire at all; do you recollect that?—I understood that to be the reason why the fire brigade was transferred to our Board; the offices very cheerfully contributed and paid something like 20,000 *l.* a year at that time for the support of the fire brigade, but some other offices would not contribute, and then the offices which paid said, We will not contribute either; we will throw it over. Now, if the Government had not taken the matter up, and the town had not instituted the rate for fire brigade purposes, the insurance offices would soon have set up their engines again, because the loss to them would have been immense.

5423. Are you aware that some fire insurance offices never insure places which it is likely will be burnt down; now, for instance, they will insure a street where

Mr *E. J. Thompson.*

26 June 1876.

people do not burn their houses down, or where it is very unlikely they would do so, but that where business is carried on the places are very often burnt down? —They have a choice in the matter, but I believe they have a scale under which they will insure almost any kind of property.

5424. However, there are persons interested in keeping up these insurance offices, and they use those insurance offices to insure places where they are not likely to have anything burnt?—The insurance offices cannot derive any benefit from the action of the fire brigade, except in places where they have insured property.

5425. Persons who have a long row of property which is not likely to be burnt down, frequently tell their tenants where they are to be insured, and they get the benefit from taking the money?—Unless a man is bound to have his house insured under covenant he would be at liberty to insure it or leave it alone.

5426. You know the Sun Fire Office?—I have some policies in the Sun Fire Office.

5427. Are you not aware that the Sun Fire Office, and several other offices, insure places where business is carried on throughout the metropolis?—No doubt.

5428. Are you not aware that some of those offices will not do anything of the sort?—I have no doubt that large fire insurance offices like the Sun have a larger choice of business than smaller offices which, having their business to make, take what is called "risky" property.

5429. You were asked if you had seen the hydrants in the Temple?—I did not know that there were hydrants there.

5430. It is only very recently that they have been put down?—I never heard of a fire occurring there.

5431. Mr. *Forsyth.*] There was a fire there about eight years ago?—I dare say, but that is a property which the insurance offices would be very glad to take.

5432. Mr. *Locke.*] You stated something with regard to the respirators which were to be used by the men who went into a fire where there was smoke. I suppose if there was nothing but a little smoke nobody would object to going in? —There is no doubt that our fire-escape men do not hesitate at even a good deal of smoke, because they have saved lives at a time when the smoke has been so dense that it has seemed impossible to enter the place.

5433. Now you say that Captain Shaw never said anything about the matter, after you told him you had purchased them; is that so?—I said that we had ordered those respirators and that they were delivered, and that Captain Shaw had not distributed them to the men; and when he was asked why he had not distributed them to the fire-escape men, his reply was that he could not take upon himself the risk of doing so.

5434. Did he say why?—He said that there was something in the mechanical arrangement of the respirators which he considered the men would not be able to manage with, and he hoped to get that set right, and that then the respirators would be distributed.

5435. When was it that that took place?—Two or three months ago.

5436. There has not been an opportunity to set that right?—No doubt that is so.

5437. But are you aware as to whether Captain Shaw has put this apparatus into some hands where it can be set right?—I am not aware that he has done anything more in the matter.

5438. Have you asked him?—This question only occurred a very short time since, when we got that answer, and we have not asked him since.

5439. You do not know whether Captain Shaw has sent the respirators for examination?—I am not aware that he has sent them for examination anywhere.

5440. You have not asked him anything about them?—The matter is altogether so recent, that I have not asked any further question.

5441. *Chairman.*] Is there anything further which you would wish to state to the Committee?—I wished in case the question were put to me to have said something with regard to the promotion of the men; it has been said that the want of a superannuation fund militated against the men's promotion; I wish to

Mr. *E. J. Thompson.*

26 June 1876.

to show you that one-fifth of the whole force has been promoted during the last two years.

5442. You would wish to represent to the Committee the facts with reference to promotion during the last two years, in order to show that promotion has been so rapid as not to justify the observation that was made?—I do not think that the want of a superannuation scheme, however good it would be to have one, has stood in the way of promotion.

5443. I did not gather that the question of promotion was mixed up at all with the question of superannuation, but that it was mixed up with the question of additional men to the force, enabling Captain Shaw, as he said it would, if he got those men, to establish different grades in the force, thereby giving quicker promotion?—No, but there have been actually 75 men promoted during the last two years, and therefore of course although resignations go on, promotions also go on, and I do not think that the question of promotion has been affected by that matter.

5444. But the question of promotion would not be affected at all by the want of a superannuation scheme?—No, but something was said to the effect that in consequence of the want of a superannuation scheme, and its not sending out men, promotions were few; I wished to show that promotion had been quick notwithstanding the want of a superannuation fund during the last two years.

Mr. *Arthur Gunn*, called in; and Examined.

Mr. *A. Gunn.*

5445. *Chairman.*] You are, I believe, the Accountant to the Metropolitan Board of Works?—I am.

5446. As I understand, the original amount of money, the capital account of the Metropolitan Board of Works, when the fire brigade was taken over, gave them a sum of 40,000 *l.*?—It did.

5447. And the income at the same time was an income derived from the halfpenny rate, from the contribution by the insurance companies, and 10,000 *l.* by the Government?—Yes; with slight additions besides under the Act of Parliament.

5448. Can you give the Committee the receipts for the purposes of the brigade at the time of its being handed over, and subsequently?—I have prepared a statement which shows the receipts and payments of the brigade every year from the formation, which can be handed round to the Committee. (*The same was handed in*). This shows that the receipts and payments have not always been in exact relation one to the other. Sometimes the receipts being sufficient to meet the payments; take the second year, the year ending 25th March 1867, but uniformly you may say that the payments are in excess of the receipts.

5449. You carry your balance forward, I suppose, from one year to another; either the deficit, or the balance in hand?—We do so. This Table shows a total received, in round numbers, of 652,000 *l.*, and a total payment of 645,000 *l.*, up to 31st December last year, showing a cash balance in hand of 7,256 *l.*; but that is not the real balance to the end of the year, because, of course, there were bills unpaid at the time, and also some income not received. After the close of the year we take out the bills paid during the following six months on account of the brigade, and so adjust the account, and in doing so, with regard to the fire brigade, we find that the bills presented this year, 1876, for the services of 1875, amount to 10,200 *l.*

5450. Is that in addition to the 75,059 *l.* which stands to the account of 1875?—It would be in addition, but you must not conclude that the expense for the year 1875 was 85,000 *l.*, because this 75,000 *l.* included in the same way bills unpaid in 1874; 75,000 *l.* might be said, perhaps, to be the expenses of the year, but deducting the bills paid this year, and taking into account how much could not be met out of the balance, there was a deficiency up to the 31st December of 3,529 *l.*

5451. The receipts up to that time, upon which you have counted, did not include the fresh assessment, I believe?—No, they did not.

Mr. *A. Gunn.*

26 June 1876.

5452. There is, in consequence of the fresh assessment, a probable increase to the income in the next year?—I have here the estimate for the year 1876.

5453. Will you hand that in?—(*The same was handed in.*)

5454. Mr. *Hayter.*] How do you drop 12,000*l.* between 1869 and 1870 in the receipts?—Without exactly stating the date, it arises in this way: The Loans Act of the Metropolitan Board of Works passed the Houses of Parliament in 1869, and that Act consolidated the different rates of the Board, so that henceforward instead of the fire brigade rate being levied at Michaelmas in all the parishes of the metropolis, the halfpenny was included in the general rate of the Board, the precepts for which are issued in January, so it would arise, no doubt, from a difference of date, and not from a difference of income.

5455. *Chairman.*] Ought not that to have brought a proportionately larger balance in the next year's receipts?—You will see in the two following years that the receipts are more than the payments. The income is not diminished in any one year; on the contrary, the rate has been a sum gradually increasing in the total.

5456. The rate was increased at one time, was it not, when the annual charge for the interest of the debt was taken out of it?—Yes, the effect of that was to increase the result of the rate slightly.

5457. That was in 1869–70?—Yes; thenceforward the charge for the debt comes outside the halfpenny.

5458. Mr. *Hayter.*] From 1867 to 1868 there is a decrease of 1,300*l.*?—That may arise from the fact that although the contributions from the fire insurance offices are due upon quarter day some of them pay a little before, and the amounts would come into the previous account.

5459. *Chairman.*] But taking the actual cash receipts and the cash payments of the year, they tolerably balance each other up to the present time when you include in your question of receipts the increases which arise under the fresh assessment?—I would rather put it the other way, if you would allow me, that the expenditure has been kept down in order that it might not be greatly in excess of the receipts.

5460. That is to say, knowing that your receipts cannot exceed a certain sum, the expenditure has been regulated accordingly?—Yes.

5461. And that you have even had to trench upon the coming year, almost every year since the brigade was handed over?—More or less so.

5462. To forestall the future income?—Yes, perhaps rather more lately than formerly.

5463. I suppose that arises from all the expenditure for material and other things having gone up?—The wages of the men were increased in 1871 or a few years ago.

5464. Having given the estimate of receipts, can you give the Committee an estimate of the way in which the annual charges are divided; I refer to the establishment charges?—The Board has always charged half-yearly the fire brigade funds with a portion of the cost of the establishment at Spring Gardens; some of the expenses in the different departments; in the solicitor's department, for instance, there is a slight charge made half yearly. In 1870 there was a charge of 96*l.* in the first half year, and 92*l.* the next half; in 1874 there was a charge of 71*l.* in that department, and 75*l.* the second half of the same year.

5465. Are those charges for services rendered to the brigade by the general establishment?—Yes, by the general establishment. Then, taking the engineer's department, that was principally in connection with the floats, which gave a great deal of work. There have been charges since 1873 for the establishment, of 159*l.* for one half year, and 171*l.* the following half year, and then in the accountant's department there has been also a charge of 190*l.* for one half year, and 214*l.* another half year, and so forth, and these amounts all added together make the total shown in the accounts.

5466. Those charges, I suppose, include the architect's charges for new stations which may arise?—No, they do not; those are charged to the capital account, because we take the professional charges as being part of the cost of the erection of the station.

5467. Can you hand in a detailed account with regard to the different heads of expenditure since 1866?—I have prepared myself with a statement showing the

the expenditure under every head from 1866 down to the end of last year; it is a very large statement, probably hardly worth putting on the notes.

5468. Will you hand in that statement with regard to the way in which the wages have risen. (*The same was handed in*)?—The salaries and wages paid away in the year 1866-67, which is the first year, are 17,509 *l.*; in 1867-68, 24,480 *l.*; in 1868-69, 28,700 *l.*; in 1869-70, 30,600 *l.*; in 1870-71, 29,650 *l.*; and then for the nine months following they are 23,500 *l.* In the next year, 1872, 31,400 *l.*; in 1873, 36,400 *l.*; in 1874, 36,800 *l.*; and last year, 1875, 37,710 *l.*

5469. Those were for wages and salaries, were they not?—They were for wages and salaries alone.

5470. Now will you give the Committee another head, of fixed expenditure; I wish to get at the principal heads of expenditure which must go on; clothing, for example, and horse hire?—Horse hire for 1866-67 amounted to 3,748 *l.*; 1867-68, it amounted to 4,191 *l.*; 1868-69, to 5,258 *l.*; 1869-70, to 6,100 *l.*; 1870-71, to 7,060 *l.*, and the nine months following, 5,100 *l.* In the year 1872, the amount was 7,000 *l.*; in 1873, 8,006 *l.*; in 1874, 8,172 *l.*; and last year, 8,492 *l.*; so that that has gone steadily up every year. The clothing has risen also, but not to so great an extent perhaps.

5471. But the number of men has increased?—Yes, but I think, with regard to clothing, there is not the same difference. The third year is what is called the great-coat year, and that disturbs the comparison from year to year somewhat; but the expenditure in the last year, namely, 1875, was 3,600 *l.*, and up to the 31st March 1868 it was 2,680 *l.*

5472. But those are all expenses which must continue with the existing number of men?—Yes.

5473. Are there any other expenses?—Of course, coals have been a very large item of expenditure during the last few years, compared with what they were at first. In the first two years the coals cost 1,400 *l.* one year, and 1,650 *l.* the next. Then take the last three years; the coals have cost 4,480 *l.*, 3,500 *l.*, and 3,300 *l.* respectively.

5474. Now what are your expenses for repairing and increasing the material, such as engines?—The repairs to engines are large now compared to what they were also. The first year, 1866-67, the cost for repairing was 1,440 *l.*; the next year, 1,712 *l.*; and then the next year, 2,400 *l.*

5475. Was that for repairs alone, or for repairs and increase of plant?—It was for repairs of gear, without any increase of plant. Then in the last few years, under the same heading, in 1872 it was 4,300 *l.*; in 1873 it was 4,800 *l.*; and in 1874 it was 6,200 *l.* During this last year there seems to have been some postponement of the bills, so far as the cash statement. It appears to have been only 3,500 *l.*, but that is only a mere accident. The item of telegraphy will simply increase according to the number of stations increasing.

5476. That will increase in proportion as the amount of plant account increased?—Yes; then rents are gradually diminishing as the new stations are purchased or built.

5477. But all these figures show that the amount of expenditure is practically so large that the present income barely suffices to meet it; with regard to the way in which the charges upon income are apportioned at present, can you give the Committee any evidence with regard to the incidence of that as between the fire insurance offices, the Government, and the ratepayers?—I have looked into this matter. The charge to the companies is a charge for putting out fires, or preventing the spreading of a fire to an adjoining property, and you can see naturally, when a fire brigade is instituted, say, in a county town, it is at first to the interest of the town as a whole to have a brigade, and afterwards, when they are called out and go to any fire, the expenses of attending the fire are of course borne by the owner of the property, and if he is insured he sends his bill on to the insurance office, and the insurance office pays; that is the principle which I believe was in view in Manchester when an apportionment of the charge was made there under a private Act which they obtained; and not only in Manchester do the fire insurance offices pay, but supposing the owner is not insured a charge is made upon him, and if the property is insured by an office which is not a party to the arrangement, a specific charge is made upon that fire insurance office for the expense of putting

Mr. *A. Gunn.*

26 June 1876.

out the fire. As I understand the question, in London the municipality has a brigade which is ready upon any emergency to be called out to a fire. As soon as a fire occurs it is to the interest of the owner of the property where the fire takes place to have the engines and plant as quickly as possible, and he would naturally be expected to pay for the cost of the service, the municipality simply having the brigade ready when a fire takes place. Instead of the owner paying those charges by a direct account going out from the Metropolitan Board of Works, there is a charge allowed upon the insurance companies under the Act of Parliament, in respect of which they pay a commutation allowance of 35 *l.* per million. Of course it is incomplete as compared with Manchester. Manchester is able to levy a charge upon the owner of property which is not insured. We have no power of that kind in London. If a fire takes place in a house which is not insured there is no power under the Act of Parliament to charge the cost of attending that fire upon the owner of the property, so that the Act seems defective.

5478. Practically there is a tax placed upon insurance, by the fact that you charge additionally for those properties which are insured through the insurance companies; is not that so?—No, it is on a totally different account. The cost of putting out a fire is a part of the loss which the insurance companies incur by the occurrence of a fire. We will say that the loss of property in a fire, out of a value of 3,000 *l.*, is estimated by their surveyor at 300 *l.* Then the cost of putting out the fire is another 50 *l.*; the loss from the occurrence of the fire is therefore 350 *l.*

5479. But the whole is charged to the insurance office?—Yes, the whole is charged to the insurance office. Suppose there were no method of extinguishing fire, the loss to the insurance company would be very much more than 350 *l.*: so that it is not a tax at all, in my humble judgment, upon the insurer. It is a part loss of a fire; part, indeed, of the fire risk. Say that the loss of the fire insurance offices is, upon the whole, 100,000 *l.* a year, and the additional payment which they make to the fire brigade, added to that, is another 18,000 *l.* a year, it does not go to the insurers' side of the account; it is chargeable to the profit and loss account, as it would be part of the losses from fire.

5480. What I rather meant was, that it seemed to be a tax upon the insured property as compared with the uninsured property in the town. You have not in London as you have in Manchester, as you described, a power of dealing with uninsured property, by raising a rate upon it supposing a fire takes place. The only mode in which you deal with uninsured property when you require to keep up a fire brigade is, by taxing the ratepayers generally; but then there is an additional amount to that upon insured property, by making a charge upon the fire insurance offices?—It has to be borne in mind that a very large portion of the property which is said to be uninsured in London, is not property totally uninsured, but property which is partly insured; it is well known that the property which is wholly uninsured in London is, as a rule, very small property; the owners will not insure the contents of their houses; but it is also the fact that in large warehouses the insurance is often not equal to the total value of the contents; it is a part insurance, and then if you allow a sum for that it will be seen that the insurance offices to some extent themselves do not pay sufficiently upon that part which is uninsured of the contents of that one building; the amount of property which escapes the tax altogether is not the total of uninsured property in London, because a great deal of the property in London is partly insured, and therefore pays to some extent for the fire brigade. That property only escapes which is wholly uninsured, like small property, such as cottages, where the contents are rarely insured; the owners of these contents being the very poorest of the inhabitants.

5481. The principle goes, as has been asked of a previous witness, a great deal further; because if upon the question of the protection of property from fire the theory is set up that the personal property has to pay in the way you describe, it ought to contribute to the police and various other forces which we have for the protection of property in the metropolis, ought it not?—No, for this reason, that the police duty is probably about equally distributed throughout the whole of the metropolis. The property which is very expensive is not perhaps more keenly watched than property is in the suburbs, which really gives the police, I am told, as much trouble as the more valuable properties.

properties. Therefore, looking at the police alone, it is fair that, to some extent, the rateable value should be the basis for the contribution; but looking at the fire brigade by itself, it is clear that when the municipality has once started it, say in the event of a fire occurring on the banks of the Thames, or at any large warehouses where the contents in relation to the rateable value are far in excess of the proportion in houses in the West End, or in the suburbs, it is not then fair to make the rateable value the basis of contribution for the support of the brigade. Again, the question was asked, why should not the Metropolitan Board of Works, in respect of sanitary arrangements, make a charge upon the life insurance offices. It will be seen that in that case the incidence is a very indirect one. We have a similar case in regard to buildings, in the carrying out of the Building Act, but that is an indirect expense which could not be brought to bear. It is well known that fires are diminished by the operation of the Building Act, under which, for example, woodwork is not allowed to project beyond a certain extent, and that is an indirect benefit which the fire insurance offices get through the work of the Metropolitan Board of Works, but it is very indirect, and therefore no charge whatever could be made in respect of it. In the same category I would put the saving to life insurance offices from the sanitary arrangements of the Metropolitan Board of Works, in which the benefit is entirely indirect; but when you come to putting out a fire, there is no difficulty in finding out who is the proper person to pay for it, that is to say, the person whose property is saved by the exertions of the fire brigade.

5482. Therefore, would it not more properly take the form which it takes in Manchester, in the shape of a direct charge upon the owner, and not upon the companies?—In Manchester the companies have come to an arrangement of their own, and all the charges are paid by the company in which the property is insured.

5483. Is that under the Act?—Yes, but it is voluntarily for the convenience of the offices who come into this arrangement; instead of the corporation of Manchester sending the bill to everybody where a fire takes place, the companies pay a yearly charge.

5484. Was that subject to a local Act?—It was not immediately under it, but subject to arrangement.

5485. The local Act giving them the power to levy a charge upon the owner of the property destroyed?—I have the clause of the Act. It is Section 119 of the Manchester Police Regulation Act, the 7 & 8 Vict. c. 40, of which the short title is, "Expenses of fires to be paid to superintendents of police by fire offices, and proprietors uninsured." It states, "And whereas, in the case of a fire certain extraordinary expenses are incurred (that is to say), in wages of the fire police consequent upon the occasion in addition to their ordinary allowances, and in the pay of further assistants necessarily employed on such occasions, and in the wear and tear of engines and utensils, and by damage and injury sustained by such fires; and whereas it is expedient that the proprietors of property endangered by such fires should join in contributing towards such extraordinary expenses, and that all such extraordinary expenses as aforesaid should be borne expressly, in fair and equal proportions, by and amongst the persons interested in the preservation of property, to which assistance has been *bonâ fide* given or extended by such police in case of such fire; be it therefore enacted, that all such extraordinary expenses as aforesaid, in the case of any fire, shall be paid to the superintendent of the said fire police establishment by the respective proprietors of property in proportion to the value of such respective property as aforesaid: Provided that no proprietor shall be liable to pay a larger sum than the amount of his property, and if any difference shall arise between the said proprietors, or any of them, on the one part, and the said superintendent on the other, as to whether any such demand ought to be paid, or as to the amount of any such demand, then any two justices shall, on the application of the said superintendent, cause any such proprietor so disputing as aforesaid to appear before them, on reasonable summons or notice in that behalf, and shall, on hearing the parties and their witnesses, settle whether any, and if any, what amount ought to be paid to the said superintendent by such party as aforesaid; and if it shall appear to such justices that any such sum ought to be paid, the said justices shall, by

Mr. *A. Gunn.*
26 June 1876.

their order, direct such party as aforesaid to pay to the said superintendent such sum to them so appearing to be due, together (if the said justices shall think fit) with reasonable costs to be fixed by the said justices, and the said party shall forthwith pay the same sum and costs to the said superintendent accordingly."

5486. And, subsequently to that Act, the insurance companies have, by agreement, taken upon themselves that charge?—They have for some years. I have been in communication with Captain Palin, the chief constable of Manchester, and he has been good enough to give me information. He says that "The insurance companies have for some years past by arrangement with the corporation paid an annual contribution in lieu of such charges upon the owners."

5487. I suppose they recoup themselves upon their insurances?—It is part of the cost of the fires.

5488. That practically they would have had to pay as part of the cost to the owner in case of a fire?—The fire would have been much larger but for the attendance of the brigade. The fire insurance offices are perfectly willing to pay 100 *l.* for the brigade and save 500 *l.* or 1,000 *l.* from the fire. It is part of the loss of the insurance company.

5489. That is part of an agreement between them, but do they raise their premiums or otherwise so as to recoup themselves for that charge?—I take it that the charge would be exceedingly small. In 1862, when a Select Committee sat upon the matter, the charge only amounted to 2 *d.* per cent., and the cost of the old fire brigade was 25,000 *l.* a year to the fire insurance offices, as compared now with the charge of 19,000 *l.*, and the business has gone up from 300,000,000 *l.* to 540,000,000 *l.*, and the insurance offices are in as good a position now as then as regards the value of their capital.

5490. But in the manner which you have described at Manchester, all the property does come under the liability to pay for its protection?—It does where a fire takes place.

5491. That is not the case absolutely in the metropolis under the Fire Brigade Act?—There appears to be an omission in the Metropolitan Fire Brigade Act. There is no power on the part of the Board to levy a charge upon the owner whose property is not insured.

5492. But the power exists in the Metropolitan Fire Brigade Act to get a contribution towards expenses from the companies upon the insured property?—Yes.

5493. In your opinion is that a fairer way of dealing with it than the Manchester way?—I think it is about the same thing. There is a commutation at Manchester.

5494. By fairer, I meant that at Manchester the owners generally are liable, whereas here, as far as the contribution from the fire insurance offices is concerned, the owners only of insured property are liable. The owners of burnt property are liable in Manchester, and the owners of insured property in London. The way in which you touch the owners of uninsured property in London is by their contribution to the metropolitan rate. Is that a fairer or juster mode of dealing with the matter than the Manchester one?—I consider that in London we require the power to charge the owner of the property which is burnt and not insured.

5495. Then in that case the power of levying the 35 *l.* per million should be done away with?—No, I do not understand that at all. The insured property now pays for assistance at a fire, and so they will pay, 35 *l.* per million, for all they insure, and, therefore, whatever fire takes place on insured property, you will not send out an account for that fire; it is settled by this 35 *l.* per million, but over and above that the Board would be justified, I take it, if Parliament would sanction such a course, in charging the owner where there was no insurance for the cost of putting out a fire.

5496. But the Manchester law is, that setting aside all contributions from insurance companies under the Local Act, the local authority have power to levy a charge upon all property to pay for the services of the brigade where applied. Then, supposing, as I understand you to suggest, that it would be fairer that it should be applied with regard to the property in the metropolis, ought you still to continue the raising of that money from the insurance companies in that particular

ticular way, because you would have the power of charging the owner who called in the service of the brigade?—It would be a very new mode of levying the charge in London to levy a direct charge on every house that took fire.

5497. That was the system of the Local Act at Manchester?—Yes, that was the system of the Local Act at Manchester, but Manchester is very much smaller than London, and the police who man the fire brigade are paid, to a certain extent, by rates, whereas the firemen in London are paid by a special fund; and, as far as insured property is concerned, the present system is not convenient only to the metropolis, but to the fire insurance offices. Instead of having a multitude of charges for different fires which occur, we have a commuted charge; but I say that to make the thing perfect, in order that the uninsured may not be relieved from the expenses of a fire which takes place upon their property, the Metropolitan Board of Works should have the power of levying a charge upon such owners whenever a fire takes place.

5498. So as to get over the inequality which exists between insured and uninsured property?—I think so.

5499. Did you say that the Manchester brigade was supported out of the borough rate?—I cannot answer that question.

5500. The brigade costs 6,000 *l.* a year, and the insurance offices contribute 2,250 *l.*, I think?—Yes.

5501. The rest would fall upon the borough rate, would it not?—I think it would.

5502. Mr. *Stewart Hardy.*] Can you state at all what they get by this charge upon the uninsured property which is burnt?—Altogether they receive about 2,000 *l.* under the head of fires both from the insurance companies and the owners of uninsured property together.

5503. Will you bring with you the Manchester accounts upon a future occasion?—I will; but I have this before me:—"City of Manchester: Extract from treasurer's statement of receipts and expenditure; 1873–4: contributions from insurance offices; for expenses at fires, and other casual receipts in the fire engine department, 3,147 *l.*"

5504. But of a total expenditure for the purpose of the brigade, of how much?—A total expenditure on current account of 6,040 *l.*, and on new fire stations and interest on borrowed money, 376 *l.*; that is, capital account; loans levied, 1,550 *l.*, and transferred to new stations account, 5,140 *l.*

5505. That does not give the wages of the police?—It gives the firemen's weekly wages.

5506. That represents the whole expenditure for the purposes of the Manchester Fire Brigade?—I take it that it does; there are 42 firemen, three engineers, one steam engineer, one superintendent, and one assistant.

5507. Although you have quoted Captain Palin as having informed you with regard to the matter, I understood you rather to state that it was a police force; I am not sure that it is actually a part of the police force in Manchester?—It is only so at Liverpool, but Captain Palin, who is the chief constable, seems to have had the oversight of the whole.

5508. Do the accounts for the fire brigade appear in the police account?—No; this is in the accounts of the city of Manchester.

5509. I think we may understand that it is a separate force not connected with the police?—As regards superannuation they seem almost to go together; they have the same arrangements for superannuation as the police superannuation fund, under the provisions of which the fire brigade have only recently been brought by the local Act of Parliament.

5510. I think it would be more convenient if we take evidence from Manchester to take it direct, so we will leave that question. However, I understand you to state that you think that the same power which exists in Manchester ought to be given to the Metropolitan Board of Works here, of charging the uninsured for the service of the brigade?—I do.

5511. Have you formed an opinion with regard to the way in which the increased income which is required should be raised, and the proportions?—I have not done so, but assuming that it was considered fair in 1865 that the proportion should be as the insurance contribution then was to the produce of the halfpenny rate, then it seems to me, in the absence of any reason to the contrary, that the same proportion carried out now would be proper.

Mr. *A. Gunn.*

26 June 1876.

5512. Under the same circumstances, I suppose the proportion contributed by the Government should be raised, or does the Government property remain very much in the same condition?—The Government property is increasing very much in value now; there are very large offices built since then.

5513. The Government property is as much dependent now upon the services of the fire brigade as when the 10,000 *l.* was placed upon it?—The Government does pay for extra fire brigade assistance in the Post Office, where there are several men continuously employed.

5514. And the same with regard to private establishments, when they require special service they pay for it?—Yes.

5515. Are the men so employed in addition to the force which is ordinarily stated to be the strength of the brigade?—No, they are included in the extra men.

5516. But to that extent the strength of the brigade is weakened by supplying either Government or private establishments with special help?—There are not many of our men so employed. I should like to show how the funds of the brigade have been restricted by referring to the books of the Board, which shows weekly the cash which the Board has under its control. This is the year 1874 (*producing an account book*). In February the account is over drawn; 27th February, over drawn; and so it goes on until we get to July, and then in July for a few weeks, by the halfpenny rate coming in, it is balanced. Upon the 3rd July 1875, the rate has become due; it is paid half-yearly.

5517. And the rate is your largest amount of income?—Yes; upon the 3rd July we are 7,000 *l.* in funds, and the four following weeks the fire brigade was in funds, and then upon the 7th August the account was over drawn again, and that is continued up to the 11th December, and upon the 18th December, and the 25th, the following week, it is in funds.

5518. All of which would rather show the necessity for an increased income?—It shows the great difficulty of working it, and keeping it in funds under the present rate.

5519. Sir *Henry Peek.*] But you are going to have a very large increase of assessment this year?—Yes; that will come in. The same thing occurred in 1869, but the increased expenditure overtook the increased income.

5520. *Chairman.*] As long as they found the assessment gave them a larger amount of income, the expenditure was increased by the setting up of fresh stations and of appointing fresh men?—Yes.

5521. There is a fresh valuation every five years, is there not?—Yes.

5522. In the interval between those years, is not a certain amount of additional assessment credited annually?—Yes; the increase to the rateable value of the metropolis is about a quarter of a million during the four intermediate years, and then upon the fifth year it rises very largely. In 1876, the produce of the halfpenny rate is 48,000 *l.*, as against 38,000 *l.* in 1871, so that it is increasing rapidly.

5523. Will you give the Committee a short statement of the capital account of the Board?—(*The same was handed in.*)

5524. In this Table you show that the amount borrowed was 40,000 *l.* in 1869; was that the amount which was authorised to be borrowed in 1865?—Yes; it comes in this way because it was re-borrowed when the Loans Act passed in 1869, out of Metropolitan Consolidated Stock.

5525. But really the original 40,000 *l.* was borrowed in 1865?—There are two loans, one of 30,000 *l.* and the other of 10,000 *l.*

5526. Did not the Loans Act of 1869 give very large borrowing powers to the Metropolitan Board of Works?—Yes; it limited the power to 10,000,000 *l.* of money, of which 8,000,000 *l.* had been borrowed before.

5527. Out of that 10 millions, 50,000 *l.* was then applied, was it not, to fire brigade purposes?—The estimate then put in was 50,000 *l.*

5528. Fifty thousand pounds was the sum put in then to be appropriated for fire brigade purposes out of the 10 millions which was allowed to be borrowed?—Out of the 10 millions, 90,000 *l.* was allotted to the fire brigade, that is to say, the first 40,000 *l.* and the next 50,000 *l.*

5529. Notwithstanding the indebtedness of the Board at that time with regard to that 10 millions limit, there was a considerable margin over, of which, with the Treasury consent, they had control, was not there?—Yes.

5530. That amount was about 136,000 *l.*, was it not?—It was 136,000 *l.*

5531. This

5531. This power remained unchanged until 1875, did it not?—Until 1875.

5532. During that time, I suppose the Metropolitan Board had power, if they had thought it wise, to increase the amount of capital they might have expended upon the fire brigade as long as it was within the margin of the 136,000 *l.* which was not engaged?—There was literally a power given to them to that extent, but it was known that other services required fresh funds, although I am not sure that I could say that they would think that any portion of that 136,000 *l.* could be fairly raised for the fire brigade, because those amounts included the completion of the Thames Embankment, and partly of the Chelsea Embankment, and of the main sewer.

5533. But was not the 136,000 *l.* a balance unappropriated, which might have been applied to any one of those works literally?—I was going to say that although the next item is "Minor Improvements," yet still it is important to be considered that in limiting the power of the Board in 1869 to 10 millions, Parliament, so to say, abrogated the power the Board had previously had of raising any amount they required for minor local improvements; and inasmuch as the Board was restricted to 80,000 *l.* literally, yet as time went on, instead of coming to Parliament for fresh money for those minor improvements, which constituted an annual expenditure of a certain kind, although the improvements are different every year, yet the margin would be rather more exhausted by that item of minor improvements than by the fire brigade.

5534. Then do you imagine that the Board considered that they were limited to the actual 50,000 *l.* which they had placed as the estimate for the fire brigade purposes in their Loans Bill?—As a proof that they did not take fully that view they spent more.

5535. They spent 25,000 *l.* more?—Yes, but it was upon an entire view of the finances of the Board that they were able to say, We can spare this amount out of the margin for the fire brigade.

5536. But upon two occasions, out of the balance of 136,000 *l.* they have expended 10,000 *l.*, and 15,000 *l.* for the capital account of the brigade?—Yes.

5537. But by the Act of 1875 all their powers of adding money were stopped, were they not?—Yes.

5538. And by the Act of 1875 they could not increase the capital account of the brigade, excepting by applying to Parliament?—That is so, but literally there has been no exact repeal, I believe, of the clauses under which we could raise money for the fire brigade under the original Act, but I do not think it would be entertained as at all right to do so.

5539. Does not the Act of 1875 say that Parliament was to authorise all future loans?—Yes.

5540. Therefore that would override the original power of spending this surplus money upon the fire brigade?—Yes, I think so.

5541. The money, therefore, which has been borrowed for the fire brigade has been the original 40,000 *l.*; 50,000 *l.* which was put in the Metropolitan Board of Works Loan Bill, and 25,000 *l.* that they have since added out of their surplus capital, and there is another sum, I think, of 15,000 *l.*?—Yes, in the year 1875. That amount is not included in this return, because the money was not raised until 1876.

5542. But really there has been a total amount of 130,000 *l.* raised for the purpose of the capital of the fire brigade?—That has been so, but the whole of it has not been expended, although it will be expended during this year.

5543. What is the whole of your capital account now unexpended?—About 11,000 *l.*, but it is all required for stations which are being put up or which will be put up.

5544. In fact, the whole of the capital account is forestalled?—Yes, and Parliament is asked this year for permission to spend 10,000 *l.* more on the capital account of 1877. This is the new plan of raising money by bills, by which annually the Metropolitan Board is brought before the Treasury for further borrowing powers.

5545. Is that the sum that you are asking Parliament to sanction for the new station?—No, that is another matter.

5546. £. 10,000 is the sum you are asking for for the extension of plant and stations?—Yes, the sum which has been asked for for the head-quarters station is in addition to that; you will probably be asked for that this year because it will be required.

Mr. *A. Gunn.*

26 June 1876.

5547. Therefore the Metropolitan Board of Works are applying to Parliament for power to raise additional capital, but they have not yet applied for power to raise additional income?—That is so.

5548. Have you any statement that you wish to put in with regard to the expenditure at each station?—I have here a return which shows the amount expended on every station from 1866 down to 1875, making a total sum of 115,399 *l.* This shows their cost of construction. (*The same was handed in.*) I have another return which shows the amount spent in repairs, if the Committee would wish it. This return, which I now produce, shows the amount of the rent of the stations, the purchase-money, the cost of erection, and the amount afterwards expended in repairs up to the 31st December 1875.

5549. From the original taking over of the brigade?—Yes.

5550. Will you hand that in?—(*The same was handed in.*)

5551. Mr. *Ritchie.*] Am I correct in saying that the total amount expended in repairs and alterations since the Board took over the brigade has been 14,824 *l.* 9 *s.* 1 *d.*?—That is so.

5552. That gives an average of about 1,500 *l.* a year spent in repairs and alterations?—Yes.

5553. You stated that you would make the uninsured pay for the cost of their protection?—It seems to be reasonable.

5554. Upon what principle?—Because they would desire that the engines should be sent to them; it is reasonable, therefore, that they should pay.

5555. Whether their property was destroyed or not?—Of course, if an uninsured person were to say, "Go away, we do not want the engines," the Metropolitan Board of Works ought not to charge; but no sane individual would say that.

5556. But how about the next property; if the uninsured property was bounded by insured property, you would be bound to keep your engines going, would you not?—I think we should be bound: but I think you are supposing a case which would not occur, because you can judge by the experience of the few fires which take place outside the metropolis, where the population pay nothing towards the metropolitan engines; they are glad to get the engines, and they will pay any reasonable cost incurred in putting out the fires.

5557. I wished to ask you one or two quertions with respect to income and expenditure; what did you say that the gross income was in 1867?—The receipts were 57,000 *l.* in the year 1866-67.

5558. What did you say the amount of wages paid in that year was?—£. 17,500.

5559. And what were the receipts?—The receipts were 57,600 *l.*

5560. The payments were 47,000 *l.*?—Yes.

5561. That shows a difference of about 30,000 *l.* to be accounted for otherwise?—Yes.

5562. And what was it in 1875?—The payments were 75,000 *l.*, the wages being 37,700 *l.*

5563. That shows a difference of 37,000 *l.*?—Yes; 37,000 *l.*

5564. What I want to understand is this. I see in the year 1867, by this return which is before us, that there were only 39 fire engine stations?—That is so.

5565. In 1876 there are 48 fire engine stations, showing an increase of nine stations; I find that you have stated that the repairs to the engines alone during those two years amounted to something like 5,000 *l.*, and I still find that between the expenditure of 1867, when you had so many fewer stations, and the expenditure for 1875, the difference is only 7,000 *l.* Out of that you account for about 5,000 *l.* in that one item of repairs to engines, so that only leaves a difference of about 2,000 *l.* for all the other additional expenses which have been rendered necessary by the great increase of the brigade; what I cannot understand is, how it happens that the difference between wages and expenditure was only 7,000 *l.* less in 1867 than it is in 1875?—The reason I think is this, that in the early days of the brigade the purchase of the engine and gear, when only that 40,000 *l.* was allotted by Parliament, was made out of the working account, and now that the Board has greater borrowing powers for the purpose of the fire brigade, those purchases would be made from capital account where possible.

5566. That is one of the questions which I asked one of the witnesses, whether there

there had not been in the first years of the brigade a good deal of money spent from income which ought to have gone to capital?—It was so certainly; but whether it would lead to the conclusion which you have come to, I can hardly tell.

5567. Upon the fact of it, it certainly does require some sort of explanation, seeing how much larger the brigade is now; you cannot account for it in any other way. Now, may I ask you what was done with the fines?—The fines are in diminution of wages, I think. I have a table showing the deductions from the amounts payable to the men for fines.

5568. I think a list was put in showing an amount of 200 *l.* in fines since the brigade was taken over. I wanted to know whether that was appropriated by the Board, or whether it was put aside for separate purposes for the benefit of the brigade?—The amount is very trifling in the whole. This sheet comes to some hundreds of pounds, and there are only 13 *s.* deducted.

5569. Whatever is deducted, the amount practically goes towards reducing the expenses of the brigade?—But the brigade does not get the benefit of the amount of the man's labour.

5570. But fines are incurred in some cases, in which a man may continue to labour; he might commit some small breach of discipline?—To that extent the brigade has been injured by that breach of discipline, and the man therefore does not derive so much wages from the brigade, so that it is not as if you took the man's private property; you simply pay him less that week.

5571. In some institutions of that kind those fines go to a separate account altogether, and that account is used for the benefit of the men, to some extent?—It is not so in this case.

5572. Sir *Henry Peek.*] If a loss were total, is it not almost adding insult to injury to a fire insurance company to make them pay over and above their loss for the putting out of the fire?—Yes, it might be in that one case probably, but that is an exception to the rule.

5573. Are there not a great many fires where there is a total loss to the insurance company?—It is quite an exception to the rule; the rule is partial loss.

5574. Mr. *Clifton.*] I see in the return amongst the amounts receivable are chimney fire penalties, 1,000 *l.*; what do you charge for a chimney fire penalty?—A magistrate has to state what sum shall be charged, but the Metropolitan Board of Works found that there was inconvenience to the public in going up to the magistrate. Very great complaints arose, and therefore a circular was issued that, in all cases, persons might pay 20 *s.* If they decline, in the ordinary way the summons goes on; and if they pay this 20 *s.* it is stopped.

5575. There are 4,000 chimney fires?—No, it is 1 *l.* each they pay. There are 1,000 *l.* derived from chimney fires.

5576. But Captain Shaw says that there are about 4,000 chimney fires a year?—The reason for the amount not corresponding to that number is, that in many cases we find that persons are so exceedingly poor, because it generally happens that when persons are poor they do not have their chimneys swept more often than they can help, and to summon such people before a magistrate would simply add the cost of the summons to the Board, which is 2 *s.*, and also the cost of the fireman attending. In some cases the fine is remitted, and in other cases a small fine is levied.

Thursday, 29th June 1876.

MEMBERS PRESENT:

Mr. Clifton.	Lord Lindsay.
Mr. Forsyth.	Mr. Locke.
Mr. Hankey.	Sir Andrew Lusk.
Mr. Hardcastle.	Mr. Onslow.
Mr. Hayter.	Sir Henry Peek.
Sir James Hogg.	Mr. Ritchie.

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

Sir *Joseph William Bazalgette*, called in; and Examined.

Sir *J. W. Bazalgette.*

29 June 1876.

5577. *Chairman.*] You have been connected as Engineer with the Metropolitan Board of Works?—I have.

5578. Did you receive any instructions in 1875 with regard to ascertaining the pressure of water upon the pipes in different parts of the metropolis?—I did; and the result of those observations is shown upon the map which is before the Committee. In all there were 478 in number, and the result of them was that, out of 478 observations over the metropolis, 220 showed a pressure of under 30 lbs., 320 showed a pressure under 40 lbs., 400 showed a pressure under 50 lbs., leaving 78, with a pressure of over 50 lbs. up to 130 lbs. Then, inasmuch as the Kent Company and the East London Company have given a constant supply, I have taken them out in the same way. In the Kent Company's district 132 observations were made, in which eight showed a pressure under 30 lbs.; 52 observations showed a pressure under 40 lbs., and 90 under 50 lbs.; leaving 42 observations, showing a pressure of over 50 lbs. and up to 100 lbs. In the East London Water Company's district there are fewer observations, only 41; and they show that 22 were under 20 lbs., and the remaining 19 between 20 lbs. and 30 lbs. From these observations it would appear that if you can take it as an average (although the observations vary very much), the average would be about 30 lbs. over London.

5579. Sir *Henry Peek.*] Do you mean by pressure that it would throw up a jet of water so many feet?—No, I mean pounds of pressure. I may state that every pound of pressure represents a head of 2·3 feet.

5580. *Chairman.*] Therefore where there is 20 lbs. pressure, it would represent over 40 feet in height?—A height of nearly 50 feet.

5581. Mr. *Hardcastle.*] Does it mean that the water would just rise to that point, or would go with any force?—No, with no force. Supposing the whole of the pipes in London to be in a state of quiescence, at that point, if no water were being drawn off at all, it would rise to that height in a tube; not forcibly in a jet.

5582. *Chairman.*] Have you any further details to give the Committee with reference to the number of places of which you took observation? You stated a certain number of observations generally which had been taken, and you stated the number in two of the water companies' districts. Were any special points taken in any other of the water companies' districts in the same way?—Yes; I have not worked them all out in the same way, but I can state them generally. Taking the New River Company, if I may take it as an average, the pressure in their district varies from 25 lbs. to 40 lbs.; the Southwark and Vauxhall from 20 lbs.

20 lbs. to 40 lbs.; the West Middlesex Water Company from 20 lbs. to 30 lbs.; the Grand Junction Water Company from 30 lbs. to 40 lbs.; and in the Lambeth district the pressures were very much more unequal; they vary generally from 10 lbs. to 70 lbs. I am not giving the extremes; I am endeavouring to give something like the rule as nearly as I can. They vary so much in that case that I cannot give the average. In the Chelsea district the pressure was from 30 lbs. to 40 lbs.

5583. Were those observations taken in the day time generally?—The observations were taken in the day time generally.

5584. Would observations taken during the evening or night show a different force, owing to the consumption of water not being so great at that time?—I should anticipate that the pressure at night would be greater than in the day time, because there would be less water being consumed, but I should also anticipate that the pressure in January and December would be greater than it would be in the hot months, for the same reason.

5585. Then, if there were no water at all flowing, and no consumption at all, the pressure in the mains would be according to the height of the water in the reservoir, would it not?—If there were no water flowing down, the pressure would be the exact difference between the height of the water in the reservoir and the water in the pipe; it would vary according to the levels of the ground; but the moment you begin to draw water from any of the pipes you immediately affect the pressure.

5586. The pressure is also affected, is it not, by the size of the pipe?—Yes, the pressure is affected by the size of the pipes. Directly the water begins to flow, directly you begin to draw off a quantity of water, then the size of the pipes becomes a very important element.

5587. Lord *Lindsay*.] But you have not taken into account a very important thing, namely, the friction under which water will not rise to the height of the original cistern?—The water will rise to the height of the original cistern, if left at rest.

5588. But not to flow?—No, certainly not.

5589. *Chairman*.] Distances also very seriously affect the pressure, do they not?—The pressure is affected by the quantity of water drawn off, the length of the pipe and the size of the pipe; more materially by the size of the pipe as I shall illustrate by-and-bye.

5590. But I suppose all these points, with the exception of the water being exhausted by being drawn off, were tested at the time you made your different observations throughout the different districts; you were subject there to the length of the pipe and the size of the pipe, were you not?—In taking this pressure I simply took the pressure which I found in the different existing pipes; no water was drawn off; if water had been drawn off it would have immediately reduced this pressure.

5591. This pressure would have been affected?—The pressure would have been affected immediately the water was drawn off, and would have been affected according to the sizes of the pipes. In all probability in some of the lines of pipes leading down to points where we tested, water was being drawn off in different districts from the pipes, and that affected to some extent the pressure.

5592. Captain Shaw placed before the Committee certain data with regard to the quantity of water which he considered would be requisite for extinguishing fires; would that quantity in your opinion be supplied in the present condition of the mains and pipes?—Captain Shaw stated that he required 150 gallons a minute for each hose; that for a large fire he required 2,000 gallons a minute.

5593. That was for all the engines?—For 13 engines, and that as a rule that had to be discharged through 200 feet of 2½-inch hose. I should state that upon that part of the Kent Water Company's district where there is a constant supply of water the pressure varies from 20 lbs. to 48 lbs. Many of the pipes are from three to six inches diameter. In the East London Company's district the pressure averages under 20 lbs., and many of the pipes are only four, five, and six inches diameter. I have a map showing those pipes which I will exhibit to the Committee. (*The same was handed in.*)

Sir *J. W. Bazalgette.*

29 June 1876.

5594. Lord *Lindsay.*] Are not these two districts which you mentioned just now very low-lying districts, and consequently likely to have a higher pressure than the others?—Parts of these districts are low; both of them come down to the river. This (*producing a map*) is to show the East London Water Company's district, with the lines of mains upon it, and showing their sizes (*explaining the same to the Committee*).

5595. *Chairman.*] What did I understand you to say was the pressure you found upon the pipes you tested in the East London Company's district?—In the East London Company's district there are two cases in which the pressure varies from 4 lbs. to 9 lbs.; three cases in which it varies from 9 lbs. to 13 lbs.; 10 cases in which it varies from 13 lbs. to 17 lbs.; 13 cases in which it varies from 17 lbs. to 22 lbs.; 10 cases in which the pressure varies from 22 lbs. to 26 lbs., and three cases in which the pressure varies from 26 lbs. to 30 lbs.

5596. Can you give the Committee the pressure upon the constant supply mains of that company; I believe they have a large portion of their district where a constant supply is already furnished in the mains?—The constant supply portion is etched upon that map.

5597. Did you test the pressure of the water at that constant supply?—Yes, in several places. I will read some of them. I have a pressure of 20 lbs.; one from 18 lbs. to 23 lbs.; from 22 lbs. to 25 lbs.; from 18 lbs. to 22 lbs., and from 20 lbs. to 22 lbs.

5598. As I understand you, that would represent a height of water of about from 40 to 50 feet?—Yes.

5599. Then, looking at what Captain Shaw states he requires, how would that meet his requirements?—I find that to throw a jet 50 feet high through 200 feet of $2\frac{1}{2}$-inch hose, with an inch nozzle, or $1\frac{1}{8}$th-inch nozzle, would require a pressure of from 50 lbs to 55 lbs.

5600. Is that pressure to be had in the constant supply district of the East London Waterworks Company which we have been referring to?—It is not.

5601. Not in any part of that district?—Not in any part of that district.

5602. Mr. *Hardcastle.*] I do not quite understand what this pressure indicates. Does it indicate that there is a larger supply of water in the pipe, and that in the case of a pumping fire-engine being applied to it, it would give a larger supply than when the pressure is less; is that so?—No, it does not indicate that the supply is large, but it indicates that there is a head of pressure which if properly applied will throw water to a considerable height. I will put a case which will perhaps form a key. Captain Shaw has told you that you want for every hose to be able to throw 150 gallons a minute, through a $2\frac{1}{2}$-inch hose, 200 feet in length, and you can do that to a height not exceeding 50 feet; if you have a constantly maintained pressure of from 50 lbs. to 54 lbs. If the pressure falls below that, then the jet of water will not be thrown to that height.

5603. If you had a steam fire-engine you could send that quantity of water I suppose to any height that the power of the engine would allow you?—Yes, but I am now speaking of throwing water from pipes without the use of a fire-engine.

5604. Sir *Henry Peek.*] You are speaking of a hydrant throwing the water?—Yes, I am speaking of throwing the water without the aid of a fire-engine.

5605. *Chairman.*] The last question I asked you was whether the pressure that you describe as existing in the East London and Kent Waterworks districts, when you tested their supply, met the requirements which Captain Shaw stated he wished for the services of his brigade; does it do so?—No, certainly not. If the figures which I laid before the Committee are correct, in London generally the pressures are altogether inadequate to extinguish fire without the aid of fire-engines.

5606. What you have stated, and the result of your experiments, is confined to the point of superseding the use of engines by a jet from the pipes under their present pressure?—Yes, precisely.

5607. And what the Committee may infer is that, in your opinion, as long as the exeisting pressure is continued, the constant supply in the mains will not enable

enable the Metropolitan Board of Works to do away with the use of engines?—That is so.

5608. Would it be your opinion that the pressure is sufficient to supplement the use of engines, and to give facilities to the applying of water to fires in aid of the engines, and before the engines, for instance, could arrive upon the spot? I presume the head of water is sufficient to bring a certain amount of extinguishing power on to a fire?—If the fire is upon the basement, then in most cases it is.

5609. But what would be the height to which a hose could supply the water under the pressure that you have stated. I understood you to state that, taking the average at about from 20 lbs. to 25 lbs. in one district, and a little over in the other, that would give a height of water of between 40 feet and 50 feet, which might be diminished as the water was being drawn off. Would a hose applied to those pipes supply a head of water to 30 feet or 35 feet?—A hose of 200 feet in length would exhaust the greater part of the pressure now existing in London, without throwing the water to any height, merely in passing that quantity through the hose.

5610. So that practically you could not count upon the hose for throwing a jet at all?—No.

5611. What do you put as the limit of pressure which would be required in order to get a certain jet through a hose of that same length of 200 feet?—I say that a pressure of from 50lbs. to 55 lbs. will throw a jet of that quantity of water to a height of 50 feet.

5612. But that must be a constant pressure?—A constant, maintained pressure, and then I follow that up by showing what has been done.

5613. Do you refer to what takes place at Manchester?—I was going to refer to two or three experiments made at Manchester, and also to an experiment made the day before yesterday by Mr. Bramwell, Mr. Easton, and myself.

5614. Was that in the metropolis?—No, that was at Grays.

5615. With regard to the experiment which was made at Manchester, were you present when the committee visited Manchester?—No, I was not. I have the results that were taken.

5616. What were the results that were taken?—At the fire brigade station at Manchester, with a pressure of 65 lbs. upon the main, jets were thrown through 30 feet of 2½-inch hose, to a height of 56 feet. At the Manchester fire brigade station at Jackson's-row, with 52½ lbs. pressure, a jet was thrown 50 feet. At Cheetham-hill, with a pressure of 77 lbs., a jet of water was thrown from 80 feet to 100 feet.

5617. What was the length of hose in each of those cases?—The length of hose varied from 20 feet to 50 feet, but the quantity that was thrown is not stated, and that again materially affects the calculation; therefore, you cannot draw any nice calculation from these results without knowing these particulars.

5618. This pressure, I suppose, is the ordinary constant pressure?—That was the maintained pressure during the experiments.

5619. Was it a maintained pressure which you could count upon always during the day in Manchester, because you have stated that the pressure in London amounts, in some instances, to as much as 40 lbs?—That I do not know. I only know that at the time of making the experiments that was the pressure, and that was the result.

5620. But you have nothing before you to show that that is a continuous pressure there?—No, that experiment does not go to that.

5621. Although it exceeds the pressure that is to be got in London, it may be a pressure only as in London at the time of the experiment being made?—Quite so.

5622. Let us take the experiment you have yourself tested?—From those experiments, which will be spoken to more particularly by Mr. Bramwell and Mr. Easton, I take the one which is near to the result I have given as confirming that. So far as they go, they confirm the formulæ on which I base my calculations. With a pressure of 54 lbs., we threw a jet of 153 gallons per minute through 183 feet of 2½-inch hose, with 1-inch nozzle, to a height of from 40 feet to 50 feet.

5623. Did you apply that test for any time?—We did.

Sir *J. W. Bazalgette.*

29 June 1876.

5624. And it was a continuous pressure?—Yes, it was a continuous pressure.

5625. Was that from gravitation?—It was from gravitation, but it was pumped by an engine to the reservoir.

5626. Do you know what the amount of the fall was?—No, I do not. The height of the reservoir would not give the result without the distance, and the size of the pipe leading from it also. Then upon that subject, with regard to the effect of drawing off water from the pipes, I have stated that if no water is drawn off the pressure will be that due to the height of the water in the reservoir over that in the distributory pipe; but supposing 150 gallons a minute had to be supplied through a 4-inch pipe, 150 feet of pressure would be exhausted for every mile in length of that pipe; 100 feet to a mile would be exhausted through a 6-inch pipe in supplying two engines. It would be exhausted in a 9-inch pipe in supplying six engines. It would be exhausted in a 12-inch pipe in supplying 12 engines, while if the pipe is enlarged to 18 inches in diameter, 15 feet per mile, instead of 100 feet per mile, would supply that quantity.

5627. Is that irrespective of the water being drawn off in other directions?—That is irrespective of the water being drawn off in other directions.

5628. Of course, water being drawn off in other directions would diminish that?—You would immediately require an increased head in proportion to the quantity which was being drawn off in other directions.

5629. I believe you can give the Committee some calculations with regard to a fire occurring at two miles from the reservoir?—I have taken some instances on that basis. Assume a fire to take place at a distance of two miles from a reservoir, and supposing between the fire and the reservoir there is half a mile of 24-inch pipe, half a mile of 18-inch pipe, half a mile of 12-inch pipe, four-tenths of a mile of 8-inch pipe, 88 yards of 6-inch pipe, and 88 yards of 4-inch pipe connecting them, one engine would exhaust 11 feet of head, or 5 lbs. pressure in the pipes, but if there were two engines put on to the same, the head of water required would be 45 feet, or 20 lbs. to supply the quantity; that is plus the 50 lbs. which would be required for the hose and jet. For three engines 44 lbs. of pressure would be exhausted, and with the 50 lbs., that would make 94 lbs. to supply that fire. With a larger number of engines, the pressure required increases very much indeed, but if the two smallest pipes were not used, then it becomes very much more favourable. Then the six engines would only exhaust 37 lbs. of pressure.

5630. This is all supposing you are working without an engine?—No, I am now considering the exhaustion of pressure to bring the water down to the point where it would be used at all.

5631. We may almost assume that that pressure exists at present, may we not, because there are very few complaints of the deficiency in the water at present when the engines come. The only question is whether by the application of hydrants we could do away with the use of engines, and get a quicker supply?—I think Captain Shaw stated, and that it has been stated also by the engineers of the water companies, that in many places fires may occur, where if they were large fires you could not get a sufficient quantity of water to extinguish them owing to the pipes being too small.

5632. What you are stating to the Committee refers to that, and you would point out that, in the present condition of things, it may happen that even your engines are without a supply?—In many places with this pressure, and with the smaller pipes, if there is a large fire, it may happen that you could not get water enough, and as I read Captain Shaw's evidence, that has happened in many instances.

5633. Sir *Henry Peek.*] Do you mean that the engines cannot get any water sucked through the pipes?—The pipes themselves are not large enough, nor the pressure on them sufficient to deliver water for four or five engines.

5634. *Chairman.*] Are you aware that in Captain Shaw's report of this year there are only four cases of what he calls short supply of water?—Yes, I am; but I take it that that is very much owing to the coincidence that large fires have not occurred in those localities. If they did occur, what I state must be the result.

5635. What we understand is, that if in many parts of the town fires occurred,

occurred, there would be a deficiency of water, owing to the size of the pipes not being sufficient?—Yes; I would give two instances of that. Supposing a fire to take place at St. Thomas's Church, Shadwell, or in that neighbourhood, as far as I can gather from the map, the water would have to pass from the reservoir through 220 yards of 7-inch pipe, 720 yards of 12-inch pipe, and 1,200 yards of 9-inch pipe. To supply 13 engines you would require a pressure of 219 lbs. for the whole number; therefore, if a large fire, requiring all the engines in that part, occurred, it would not give a sufficient supply. Again, at Wapping Church, where the water would have to pass through 5,600 feet of 12-inch pipe, 400 feet of 9-inch pipe, 300 feet of 7-inch pipe, 700 feet of 6-inch pipe, and 150 feet of 3-inch pipe, to supply nine engines would require 2,800 lbs. pressure. Now, I may be wrong in tracing the line through which the water would have to flow upon that map. It is a very small scale and very confused. It may be that I have not got the right lines of pipe exactly, but so far as I can trace it, it shows distinctly that in those localities a sufficient supply of water could not be obtained upon the ground to supply a large fire.

5636. Not even to supply engines?—No.

5637. Of course, if that is the condition of things, I suppose the affixing of hydrants to mains charged in that way would be out of the question?—It would be altogether out of the question. Mr. Quick has stated, as appears in the Society of Arts Journal, upon an inquiry of this sort, much the same thing. He says, "At present, along the waterside warehouses, there are only very small mains, 3-inch pipes, for small domestic supplies only, just for hand or face washing in the offices. This is wholly inadequate for large fires." There are a great number of places where the supply required for the district is not such as would meet the wants of large fires.

5638. Is that evidence given by Mr. Quick?—It is evidence given by Mr. Quick.

5639. When was that given?—In the year 1873. Then Mr. Reynolds, the Manager of the London and Southwark Insurance Company, stated very much the same thing. (*Q.*) Is the present supply of water found to be sufficient in all cases?—(*A.*) It is of the very nature of a system of trading water supply that it cannot be so, inasmuch as the supply will be only given where it is paid for. There are large masses of warehouses on the Surrey waterside, which may on the whole be said to be unsupplied with water to any effective extent for fire-extinction purpose. The warehouse keepers only require water for ordinary cleansing purposes; hands or face washing; and the pipes are correspondingly made. Thus, while these warehouses contain vast amounts of valuable merchandise, they are on the land side almost without water, and when the tide is low in the river they are very much exposed to danger. An instance occurred when the King and Queen Granary at Rotherhithe, the largest in London, was destroyed, December 1871. This building was situate near the extreme end of the Kent Company's district, and where that company approached an equally extreme point of the Southwark and Vauxhall Company's district. The pipes of each company being of a small bore the pressure was thread-like, and the supply there given for an enormous building, containing 150,000 *l.* worth of goods, was only a supply such as should be given to a 30 *l.* a year house. The tide was out in the Thames, the nearest steam-floating engine was disabled, and by the time the larger floats attended the fire was beyond control."

5640. Do you read that to the Committee to show that Mr. Reynolds agrees that hydrants cannot be applied to the existing charged mains?—I read those opinions to show, not that hydrants could not be applied, but that the pipes themselves are, in many cases, so small that a quantity of water could not be obtained from them.

5641. And that hydrants would be practically useless?—It goes further than that. It goes to show that for the present use of the fire-engines the pipes are not large enough.

5642. To confirm what you said that a large fire might take place when the water supply would be entirely wanting?—Yes.

5643. And that is one of the reasons why you say that the application by the Metropolitan Board of Works of hydrants to the existing pressure of water supply ought not to be attempted?—I say that as long as engines are used

Sir *J. W. Bazalgette.* 29 June 1876.

hydrants are of no use whatever to the Metropolitan Board of Works in extinguishing fires with the present pressure.

5644. That is to say, that hydrants cannot be applied to assist the engines in extinguishing fires?—No, I think not.

5645. And for that reason your advice to the Metropolitan Board of Works is against the application of hydrants?—I think at the present time hydrants would be of no use to them whatever.

5646. You are aware, I suppose, of hydrants having been placed in the district of the Kent Water Company?—I am.

5647. Were you present at the experiment that was made with regard to the trial of eight of them?—No, I was not; but it is quite possible at most places, by shutting off the water in other directions, and where there is an engine putting on sufficient pressure, to throw water to a very considerable height; therefore, without knowing all the conditions under which that was done, you cannot come to any practical result. In the Kent Company's district there are a few places where there appears to be sufficient pressure under ordinary circumstances to throw the water to the required height, but in most cases it is not so far as we find it.

5648. You mean that, although it has been found useful in many cases where they have applied it in the district of the Kent Water Company for extinguishing fires without engines, and where they rely now almost entirely upon the use of hydrants and hose without engines, we cannot draw the conclusion that they would always be able to do so?—I think it would be wrong to infer from that, that because it has done so you could always expect to find it in that condition; that you could use it for a fire in the same place.

5649. Whenever a fire has occurred it has been found sufficient up to the present time; that has been the evidence given before this Committee?—If it has been so, there is a case in point.

5650. I do not know whether your attention has been called to the Committee of 1871, which sat upon the Metropolis Water Bill; is that within your recollection?—I do remember it.

5651. Mr. Quick was examined before that Committee with regard to the application of hydrants in the existing state of the water supply of London, and I find him giving a very different opinion upon one or two of the questions here. He was asked upon this subject: "Your Committee have satisfied themselves that the complaints are due more to the non-application of the water than to any deficiency of supply when the turncocks have arrived on the spot;" and they say afterwards that "some more stringent regulation or arrangement appears to be desirable to secure the immediate attendance of the fire-cock men by a special arrangement under some responsible policeman or other person charged with such duty, to give the earliest notices of fires to the turncocks, which might be effected by electric telegraph communication, in connection with such new general system as may be formed," that is a new general fire system; then they say, "Wherever constant supply is introduced it will be necessary for hydrants to be substituted for the present fire plugs, and it should be made compulsory on the fire brigade authorities to provide and fix hydrants on the company's pipes before the water is constantly left on in any service;" do you concur in that opinion now that it would be necessary or desirable to have hydrants put on? (*A.*) I think it would not be absolutely necessary. (*Q.*) Where mains are charged they might already have been put on? (*A.*) Yes, wherever the main is constantly charged they might have been put on"?—I fail to see, looking at it from a fire point of view, what advantage they could be under existing circumstances at all.

5652. In your opinion, the want of pressure would entirely destroy their utility?—I think it would.

5653. In addition to that opinion, Mr. Quick was asked the question, "You said that hydrants would be a great improvement in the streets; they will follow, I fancy, as a matter of necessity upon the introduction of the constant supply;" to which he answers, "They will, there is no doubt"?—I quite agree with that; I think, looking at it as a water company's engineer, that hydrants are the proper things; I think I would go as far as Mr. Bateman went, and say, that I think plugs are a crude and unsatisfactory mode of drawing water from pipes, and I think hydrants should be used as preventing that waste

waste of water from the fire plugs; that is taking a water company's point of view.

5654. What you would represent is that Mr. Quick's opinion and your own view is, that from a water company point of view hydrants would be an advantage to save the waste of water, but from a fire point of view they would not add to the facilities for putting out fire?—I cannot see that they would add in the least degree to the facilities for putting out fire. If a district is on the intermittent supply, a turncock must attend to turn on the water; and if it is on the constant supply system the fireman who goes with the engine can knock out the wooden plug quite as easily as he could turn on the water from a hydrant; whilst one man is laying down the hose, and another man getting out the suction pipe, and making ready the reservoir, one man can draw out the plug. The men carry all the tools with them, and they can do that as readily from a plug as they can from a hydrant. It is true that you cannot put the plug back again owing to the force of the water, without turning off the water, and therefore if the water has ceased to be used it would run to waste until the turncock attends and turns it off, but for the purpose of extinguishing a fire it appears to be of no advantage whatever.

5655. Might it not be of advantage in this way: we are given to understand that there is a very large mileage of mains in the towns under constant supply at the present moment. Supposing hydrants to be fixed upon them that would give greater facilities for obtaining water for the purpose of the fire brigade, would it not?—I think not.

5656. Would they not know from the fact of its being a hydrant that they could themselves deal with the water without requiring the presence of the turncock?—But if there is a fire plug they can deal with it in the same way.

5657. Are you not aware that fire-plugs cannot be placed upon constantly charged mains?—But they exist upon them to a large extent.

5658. I thought that evidence had been very strongly given, not only before this Committee, but before all Committees which have already sat upon these questions, to the effect that fire-plugs upon constantly charged mains could not exist on account of the pressure?—With the present pressure they do exist, and the same pressure is exerted upon the services as exists upon the mains?—It is much more trying to a plug to be placed upon an intermittent system with the same pressure, than upon the constant supply system, because upon the constant supply system there is a constant regular pressure, but upon the intermittent system, if you turn the water off, and then turn it on again, it comes with a blow to the plug. Captain Shaw is asked, at Question 165, "When your engines arrive at the scene of a fire, you are dependent, of course, upon the then supply given by the company; how do you get at it; it is through their turncock, is it not?" to which he replies, "If it is an intermittent supply, we depend almost entirely upon the turncock; if it is a constant supply, we can draw the plugs for ourselves, but in either case the turncocks come at some time or other, or are supposed to come."

5659. Are you aware, from your own experience, that fire plugs are placed at the present moment and maintained upon mains charged with the constant supply?—I cannot say that I have seen them myself, but I have been in communication with the engineers of the water companies, and I have made the inquiry, and am told that it is so.

5660. The contrary has been distinctly stated to the Committee; it has been stated distinctly to members of the Committee, that it was impossible to apply fire-plugs to mains constantly charged, and the whole object of the clause introducing "hydrants," instead of "fire-plugs," in the Bill of 1871, was in consequence of that impossibility?—I believe it to be a fact that they do exist.

5661. Would not even a 15-lb. pressure drive out a plug?—It does not as a matter of fact. The pressure as I have said is 30 lbs. generally over London. The 30 lbs. pressure is brought upon the service pipes the moment the water is turned on them or at any rate at some period, when they have filled their cisterns there is that 30-lb. pressure upon them, and that comes upon them in a more trying way than it would under constant pressure.

5662. Then you would represent that upon the constantly charged mains of 660 miles that Major Boulton speaks of, and which are stated not to be supplied with hydrants, there are plugs existing?—If it is correct to say that there are

Sir *J. W. Bazalgette.*

29 June 1876.

not plugs upon those mains, then it would be advantageous to have hydrants so that you could get at them where you could not get at the services, but those cases would be very few. I find from Major Boulton's return it is shown that there are 2,558 miles of mains, but they exist only in 670 miles of streets, therefore two-thirds of the streets of London are without mains in them, and the other third must have as many as four mains running parallel with each other. That, I take it, is a condition of things in which you could not rely upon the mains.

5663. You mean that the mains are not sufficiently distributed through the streets to enable you to rely upon those mains for your water supply?—Yes; the supply of water through London has not been from one design, but has been the growth of the requirements of London from time to time, so much so that you find through those streets they have something upon the average like four lines of mains. They have been added to from time to time, and a number of small mains have been put down, instead of having two or three larger mains, which would give a larger supply of water, and which could be depended upon.

5664. The 660 miles of mains which are spoken of by Major Boulton are some of them condensed in the same streets?—Yes.

5665. May we gather that you think a hydrant gives additional facilities to the fire brigade, or that you believe that for the purposes of the fire brigade the plug is equally serviceable?—It is equally serviceable.

5666. You know Captain Shaw states in his Report of this year, that the deficient supply that he has experienced has in four cases, as I have said before, arisen from want of water; that in 19 cases it arose from the late attendance of the turncocks; and in nine cases from no attendance at all; and he represented to this Committee that it was in consequence of there being plugs and a want of knowledge of the way in which the water ran and the pipes were charged, that the brigade were rendered unable to procure a supply of water for themselves?—That, I think, was not the way in which Captain Shaw put it. Captain Shaw stated that when it was an intermittent supply they had to wait for the turncock to come and turn the water on, and he also showed that from the want of knowledge on the part of the brigade of the way in which the water was flowing, it was necessary for the turncock to attend to turn it off from other pipes to go to the fire, and in the same way it would be necessary in the case of constant supply for a turncock to attend.

5667. But surely Captain Shaw stated that hydrants would be more seviceable for his use than the plugs?—Not when he is using engines.

5668. Captain Shaw states, "As far as I am concerned professionally, I should like to see hydrants placed upon all mains;" and again in answer to Question 1556, he says, "There can be no doubt that the hydrant in all cases is a superior thing for our purpose." That was not with regard to the superseding of engines, but he was asked the question whether his present brigade could not be materially assisted if he had hydrants placed upon the charged mains; to which he makes the reply I have just read, and he goes on later in that answer to say, "I do not think it would pay"?—I do not understand at all in what sense Captain Shaw can have stated it to be superior; he says, "If there is a constant supply we can draw the plugs for ourselves." He states in another part of the evidence, "We carry the same tools as the turncock does." If you can get the same opening out into the streets I do not see what the advantage of the hydrants is at all.

5669. You would say that where Captain Shaw was unable to use the plug it was from the want of the firemen's knowledge of the water arrangements of the district?—I understand that the position of the fire-plugs is marked, and that Captain Shaw can find the plugs.

5670. But you mean the Committee to infer that where a deficient supply has existed, it has not been in consequence of their not being able to use the plugs, but in consequence of their not knowing what the water arrangements were, and in consequence of their being an intermittent supply. As I understand you, you believed Captain Shaw to be able to use the plugs if the mains were constantly charged as well without the turncocks as with; therefore those cases could not relate to the fact of the plugs existing, but to the fact of the water supply not being known to the fire brigade men?—Clearly somebody who knew what the water arrangements were would be required to attend, even under a system of constant supply; because if there were a large fire going on you could not get

constant

the pressure, and it would be necessary for the turncock to turn off the water elsewhere, so as to concentrate it upon the fire.

5671. You think that even with a constant supply the presence of a turncock would be necessary?—Certainly.

5672. That is certainly very conflicting with Captain Shaw's evidence. He stated distinctly that if hydrants were placed upon constantly charged pipes he could dispense with the attendance of the turncock?—Captain Shaw was then assuming that he had full pressure in the pipe, but he was not contemplating a state of things which may exist; namely, that although there is full pressure, the pressure may be exhausted by running the water off in some other direction.

5673. Would you be able to use a plug under those circumstances, and obtain the water from a plug; would not that be a case of deficient supply of water rather?—It would; I say that you may not have sufficient pressure, and you would then, under any circumstances, require to have the water turned off elsewhere, so as to get the pressure you require, although there will be always water in the main.

5674. From that point of view the constant supply would be no more use without a turncock than the intermittent supply?—I think that leads to this: that the management of the supply of water should be in the same hands as the management of the fire brigade; that there should be no conflicting interest; that the water should not be turned off, and that you should not have to look for the proper person to turn it on at a fire, even if there were a constant supply.

5675. But if there were a constant supply given throughout London it would not be requisite that that should be in the hands of the Metropolitan Board of Works; that might be in the hands of the companies?—I think whoever manages the fire brigade should have some voice in the management of the pipes.

5676. Then, given a constant supply throughout London, is it material that it should be in the hands of the authority who has the management of the fire brigade, because if you have a constant supply, as we are told by Captain Shaw, that supply being given, he would be able, with his men, to use the pipes as he pleases without the attendance of the water companies' officers?—A constant supply of itself is not sufficient; it wants constant supply and high pressure; it you can secure constant supply and high pressure then the attendance of the turncock is unnecessary.

5677. What may we understand to be the pressure which you think is necessary in London in order to enable the constant supply to be of service?—I think a pressure of not less than from 50 to 55 lbs. should be maintained at every hydrant in case of fire, and that the head and pipes should be of such dimensions as to secure and maintain throughout a fire a pressure not less than that.

5678. Irrespective of any drawing which may take place upon it from other quarters?—Yes, irrespective of other causes.

5679. What would that represent as the pressure in a quiescent condition; that is to say, supposing you had a quiescent state of things altogether; that nobody is drawing from that particular main, but the hose which you apply to the particular hydrant, as I understand, there would be a 55 lbs. pressure?—Yes.

5680. Supposing there to be 55 lbs. pressure, and two people begin at different distances to draw from the same main upon the water, would the 55 lbs. pressure be reduced?—It would.

5681. Then, what I wish to know is, what amount of pressure there should be upon the quiescent pipe to represent the 55 lbs. pressure which ought to be obtainable when other people are drawing?—I cannot answer that question; it is dependent upon the size of the pipe and other circumstances.

5682-3. I wished to ask what pressure you thought would justify the application of hydrants throughout the town?—I can only answer that in particular cases. The pressure necessary to bring the water, and to maintain that pressure where the water is drawn off, depends upon the distance from the reservoir, the length of the pipe, and the size of the pipe.

5684. Therefore no rule can be laid down under which you would say that it would be safe to trust to the use of hydrants, so that you could dispense with the use of engines?—It would be quite impossible.

Sir *J. W. Bazalgette.*

29 June 1876.

5685. On the other hand, that has been done with regard to Manchester, I believe?—It has.

5686. Are the conditions there such, that with 65 lbs. pressure, as I understand you, they are able to do away with the use of engines?—Yes.

5687. And to trust to their hose for extinguishing fires?—Yes; but at Manchester they have a reservoir at a certain distance, and they have a given sized pipe; a large pipe leading down to the place where the fire is; and they can calculate exactly what head is exhausted between the position of the reservoir and the fire, and what the pressure will be when they are drawing that water at the fire.

5688. Do you think it would be impossible to bring about a similar state of things here?—I do not say that it would be impossible to bring about a similar state of things here, but I say it is a thing very much to be desired.

5689. That is the condition which you think the town should be placed in with regard to its pressure, namely, similar water appliances to those obtainable at Manchester, in order that hydrants might be safely put down and worked?—The only rule which I could lay down is, that no hydrant which should be used at a fire should there be a less pressure maintained at all times than 55 lbs.

5690. Only that rule would have to be supplemented by others, showing how in each particular case no other drawing from the pipe must take place?—I have not stated fully what it should be. It should be that pressure maintained when the quantity of water required for a fire was being drawn off; that is to say, when 2,000 gallons a minute were being drawn off.

5691. And until that state of things is obtained, in your opinion, the application of hydrants cannot be depended upon?—It cannot be depended upon without the use of fire-engines.

5692. There is a distinct difference between what is called a plug and a hydrant, is there not?—A great difference.

5693. Because, in answer to the following question put to Captain Shaw, "How are the plugs arranged; there are very few hydrants applied to London at present, I believe?" he stated, "I do not distinguish at all between plugs and hydrants; I never acknowledge any distinction between them. I do not think that, mechanically speaking, there is any; but I believe it has been customary for the public to call the wooden plugs, if stuck into the pipes, 'plugs,' and any mechanical arrangement for getting access to the water by the name of hydrants. There are not certainly very many hydrants, in that sense of the word, in London"?—Of course there is a vast difference between them in their mechanical arrangement. I read Captain Shaw's evidence as showing that they were the same thing for his purpose.

5694. You mean that there would be no difference, as far as beneficial results, as regarded the working of the brigade went?—Here are designs of various kinds for hydrants (*producing a tracing*). Here is what we call Captain Shaw's hydrant. This is a ball hydrant, and this shows the ordinary plug (*explaining the mechanical construction of the various forms*). The way in which Captain Shaw now gets the water is this: The position of the plug is marked up. He draws the plug and puts down this mackintosh cistern, but whether he had that or had this, it would produce exactly the same result in the supply.

5695. There is only one other point upon which I wish to ask you; have you at all gone into the estimate of the cost of placing hydrants upon the mains?—Yes; I can tell you what the cost of those have been. They are very variable; they vary, I think, from 3 *l.* up to 19 *l.*

5696. I understand that the cost of what is called Captain Shaw's hydrant, which is marked C in this diagram, is about 5 *l.*, is it not?—No; the cost of Captain Shaw's hydrant is 18 *l.* 13 *s.*

5697. Because before the Committee of 1871, Mr. Taylor who was examined, stated with regard to hydrants, in answer to Question 2650, "You say that there is a better class of hydrant? *A.* Yes, there is a better class of hydrant, which is used very extensively, what is known as Hawksley's hydrant, which would cost under similar circumstances, that is, all the work included, cutting out and putting in, 3 *l.* 5 *s.* *Q.* Is that the kind of hydrant which would satisfy you? *A.* Yes; it is a very good hydrant; but I believe from my own knowledge that the class of hydrant that Captain Shaw would wish would be a higher class

class still. *Q.* Captain Shaw being the head of the fire department? *A.* Yes; the head of the fire brigade. *Q.* And you believe that the one that would give satisfaction to Captain Shaw is of a still higher class? *A.* Yes, it would cost about 5 *l.*" So I imagine that that was the same as the one which is called Captain Shaw's here; is that different?—No; Captain Shaw's hydrant upon that diagram would cost, as I say, 18 *l.* 13*s.* I have the prices of all these hydrants as the amounts charged to us for putting them down.

5698. Mr. *Locke.*] Have you seen the hydrants at the Temple?—No, I have not; but Mr. Bramwell, who will come afterwards, has seen them; I can say that at Manchester the ball hydrant costs 2 *l.* 10 *s.*, and the Liverpool sluice hydrant costs 6 *l.* Mr. Taylor, the engineer of the Lambeth Company, objects to the ball hydrant, and Mr. Rawlinson says that he has put down a number of ball hydrants, but would never put down another; if anything gets between the ball and the pipe, and prevents it from closing, there is a good deal of leakage from it; and then again Mr. Rawlinson urges that, although it is a cheaper hydrant to put down, if anything goes wrong with it, you cannot get at it without turning off the water.

5699. *Chairman.*] I would ask you whether you have considered what the hydrant is, and its cost, which ought of necessity to be put down if hydrants are adopted; that is to say, does Captain Shaw's hydrant represent the hydrant which would probably have to be put down?—That one is more expensive than need be put down; I find the engineers of the water companies estimate of them varies from 8 *l.* to 10 *l.* each.

5700. That whilst hydrants vary in price from 3 *l.* to 19 *l.*, they think the hydrant which ought to be put down ought to average about 10 *l.*?—Captain Shaw states that he wants 100,000 hydrants for London at 10 *l.* each, which is 1,000,000 *l.*, and then I see in another place he stated that hydrants ought to be 100 feet apart; now placing hydrants 100 feet apart for about 1,500 miles of road, would cost about 800,000 *l.*; he has estimated for their being placed a little closer than that, but his estimate would be from 800,000 *l.* to 1,000,000 *l.* for putting them down all over London. I think very probably he has looked forward to additional roads, by reason of London increasing, in making that extra estimate. I think that that distance which he has specified would be in order to make them available; a reasonable thing.

5701. Do you think that it is requisite that hydrants in the metropolis should be as close to each other as 100 feet?—I think there is great advantage in having them close together; the longer the length of hose the greater will be the pressure required to deliver a quantity of water, or to throw a jet; if the hydrants were 100 feet apart, I should suppose that 200 feet of hose would be exhausted, considering that you have to go from the hydrant which is in the street, perhaps up archways and courtyards and back premises, to get the hose to play upon the fire.

5702. Are you aware of this subject having been recently considered by the City authorities?—I have understood that the City authorities were putting down hydrants, or were going to put down hydrants.

5703. Are you aware that the recommendation of that Committee was that hydrants should be placed 66 yards apart, or nearer 200 than 100 feet?—I was not aware of that.

5704. I believe that was so, consequently that would have reduced the number very much?—But then the City is a very good place to try experiments upon, because it can be done without any large outlay; the City is one square mile, whereas our district is 100 square miles.

5705. About 900 hydrants would be required probably in the City?—I am told so.

5706. Do you represent to the Committee that in your opinion the placing of hydrants in the metropolis would cost very nearly a million of money?—It depends upon the kind of hydrants which are to be used.

5707. But taking the sort of hydrants which you think ought to be put down in London?—I should not like to say what sort of hydrant should be put down in London, seeing that there is a variety of opinion among hydraulic engineers with reference to what it should be, but I should say that the cost would be from three quarters of a million to a million, but I have not the data necessary to enable me to say what it would be.

Sir *J. W. Bazalgette.*

29 June 1876.

5708. It has not cost that proportion in provincial towns, has it?—Taking Manchester and Liverpool, it has cost much more.

5709. Do you mean to represent to the Committee that in Manchester and Liverpool the application of each hydrant has cost more than you have represented?—Yes, I have compared Manchester and Liverpool with London; the population of Manchester is one-tenth that of London.

5710. But is this a question of population?—I take that as one test, what it has cost per hydrant to the population.

5711. But the cost of a hydrant in Manchester is represented to be very much under 10 *l.*: it is represented in Manchester to be 3 *l.* 6 *s.*?—And yet the whole cost to Manchester, applying the outlay in the same proportion to its population as the outlay in London would bear to its population, would come to about a million.

5712. Would not the safer test be the number of hydrants applied in Manchester, and the number you propose to apply in London; if the cost be 3 *l.* in Manchester, it is only multiplying the number required in Manchester by the extra number required for London, to get at your sum, allowing that Manchester has done what is right in adopting the sort of hydrant which they have applied?—In Manchester hydrants are applied from 60 to 300 feet apart.

5713. But what I want to get at is this: why, after we are told that you can apply hydrants in Manchester at a cost of 3 *l.* 6 *s.* per hydrant, it has been represented to this Committee that you could not apply the same system at a cost of less than 8 *l.* and 10 *l.*, and even up to 19 *l.*?—Because the engineers say that they are not the proper kind of hydrant to use for London; that they are liable to waste, and that you cannot get at them, if anything is wrong, without turning off the water.

5714. At the same time as we are asking with regard to the utility of hydrants as applied to fires, for the purpose of your fire brigade, ought we not to take the cost of the application of hydrants to the system in London to be not more, at all events, per hydrant than that at which they have been able to do it in Manchester?—They would cost considerably more in London, for this reason. At Manchester they laid down new pipes with the hydrants upon them; in London we should have to bore holes in the pipes, and put collars upon them, and fix them in that way, which would be much more expensive. Then again, there are the roads to be taken up and relaid, and so forth, so that the cost would be considerably in excess of what it was in Manchester.

5715. Would you represent to the Committee that when the fire brigade was established in Manchester, Manchester had a new line of pipes; that it was entirely fresh laid?—Manchester has had a new water supply.

5716. That can hardly be so, for in this Report of the Metropolitan Board of Works, with regard to their visit to Manchester, I find, "At Manchester these hydrants cost, when fixed upon a 4-inch pipe already laid, about 2 *l.* 15 *s.*; that included excavating, jointing, and fixing the top box, and the re-laying of the pavement"?—That is so.

5717. What I wish to arrive at is, why there should be such a marvellous difference between that system, with reference to which the Metropolitan Board of Works say it was so good that they would copy it, if they had the same system of water supply, and that which would be adopted in the metropolis; why do you say to this Committee that the laying down of hydrants in the metropolis should cost a sum double or treble the sum which it has cost in Manchester?—That has been upon the assumption that a better kind of hydrant would be used.

5718. Mr. *Onslow.*] Might I ask in passing if it has been found in Manchester that this has been a bad hydrant?—I do not know that it has, but I know that Mr. Rawlinson said it was a bad hydrant, and that he would not put down any more of them.

5719. *Chairman.*] The result of the system in Manchester has been satisfactory, not only as regards the putting out of fires, but the Metropolitan Board of Works Committee who went down to report upon it say they are quite satisfied with the system adopted in Manchester, and would be content to adopt it if the same system of water supply were adopted in London. A member of the Committee has pointed out that the Board of Works themselves state in a side note that they have fixed three of those hydrants in Deptford, and that the cost of fixing

fixing them varies from 2 *l.* 18 *s.* 6 *d.* to 4 *l.* 14 *s.* each?—In the instance quoted of the price at Manchester it is a hydrant fixed upon a 4-inch pipe. Now to fix precisely the same hydrant upon an 8-inch pipe has been charged to us by the Kent Waterworks Company 4 *l.* 14 *s.*

5720. Is that at Deptford?—Yes, and the size of the pipe upon which it is fixed has a very considerable influence upon the cost. The way in which it is fixed is this: a hole is bored in the pipe, and then a collar is put round it, or a saddle piece, and then the hydrant is placed upon that; of course the size of the pipe is a very material element in the cost (*the Witness explained the diagram to the Committee*), but as a matter of fact a hydrant upon an 8-inch pipe has cost us 4 *l.* 14 *s.* 6 *d.* Now with respect to that Mr. Rawlinson was asked this question, when examined before the committee of the Society of Arts: "We have been considering the constant supply with special reference to the prevention of fire. Can you tell us anything with reference to the different hydrants you used in towns for this purpose? In the metropolis, assuming that there must be hydrants for fire preventing and street washing, what sort of expense do you think need be incurred? *A.* It would be a very considerable item, but it is part of the capital which the companies ought to be made to supply without one single moment's hesitation. I have had considerable experience in fire hydrants, and I put up one or two of those patented ball valves, but I made a vow I would never use another. I always use a hydrant with an ordinary sluice cock, so that I am master of the position, and the thing is not master of me. With a ball hydrant, if it goes wrong you are no longer master, and you must turn the supply off before you can get at the ball to alter it. With a sluice cock, which should be made of gun metal, for 50 *s.* each you have all you require. The hydrants altogether will cost about 4 *l.* each. That includes everything up to the nozzle pipe in the street for the stand-pipe to be screwed on."

5721. That does not include fixing?—It does not include fixing; that is the kind they use at Liverpool, and it is said that they cost 6 *l.* a piece at Liverpool.

5722. That of course is the opinion of Mr. Rawlinson, but has that been found to be the working of the system?—I have not had sufficient experience of it to express an opinion upon it.

5723. There is no evidence to show that a hydrant placed at a cost very much below what has been estimated for London is not perfectly serviceable for the purpose to which it is applied for extinguishing fire?—I think it is liable to the objections which have been stated, that it is not as good as the others, because the ball cannot be got at without turning off the supply, and that leakage is apt to take place.

5724. You believe that placing hydrants in London would cost a very much larger sum than has been stated in the report of the committee who visited Manchester?—I should place the cheaper hydrant upon the average at 5 *l.* a piece. It cost us in the district 4 *l.* 14 *s.* I dare say further into town they would cost us a little more.

5725. Then if it is only to cost 5 *l.*, that reduces considerably the estimate of 1,000,000 *l.*?—It would reduce the 1,000,000 *l.* to 500,000 *l.* I say until that point is determined by experience, it is impossible to say exactly what it would be.

5726. Really, summing it up, apart from the expense, you believe the utility of placing hydrants upon the present system of pipes, charged as they are, would not justify the expense?—I do think so.

5727. Mr. *Ritchie.*] If the hydrants were only 5 *l.* a piece, that would reduce it to 500,000 *l.*?—Yes.

5728. But if the hydrants were also placed at the same distance as they are going to be placed in the City, the expense would only be a quarter of a million?—Yes, because you would have only half the number.

5729. So that if the metropolis is covered with hydrants in the same way as the City is proposed to be covered, the cost would only be a quarter of a million?—Yes; but at the same time you must remember that we have been advised by Captain Shaw that that would not be sufficient.

5730. Quite so upon that assumption, but the City have inquired into the matter, and they consider that would be sufficient?—Captain Shaw states, in his report, dated the 17th of July 1866, speaking of the danger to which London is frequently subject whenever the pipes are undergoing repair, that the pipes

Sir *J. W. Bazalgette.*

29 June 1876.

should be laid at a depth of not less than 4 feet below the level of the ground in order to avoid danger from frost; that at distances not exceeding 100 feet apart there should be attached elbow pipes which should rise in the form of fixed stand-pipes or water posts to a height of four or five feet above the level of the ground, each with a command cock at the lowest possible point near the main." Of course this estimate does not include the stand-pipe which Captain Shaw speaks of here.

5731. The stand-pipe, so long as you have the article to which you screw your hose, is somewhat immaterial, is it not; you might have it underground, accessible by lifting up a trap, for instance, might you not?—No, for the use of a hydrant without the use of an engine you must have a stand-pipe, but then I should have supposed that Captain Shaw could have carried that stand-pipe with his hose; he proposes to have a stand-pipe to each.

5732. Upon what principle have you put down the hydrants in the Northumberland Avenue?—We put down the sluice-valve hydrants without stand-pipes.

5733. Do you know what those hydrants cost in Northumberland Avenue?—The prices vary according to the main they are put upon. For a horizontal sluice-valve hydrant upon the main the Kent Company charged us 7 *l.* 19 *s.*; at Liverpool a similar hydrant has cost 6 *l.* a-piece.

3734. But you think that a sufficiently good hydrant could be put down for about 5 *l.*?—I do not say so.

5735. I thought I understood you to say so?—No; I say we want more experience with reference to what is the best kind of hydrant which can be adopted generally; there is a great difference of opinion about them at the present time.

5736. You state that as long as engines are wanted hydrants will be of no use whatever?—I think so.

5737. I want to be clear about what the meaning of the words "constant supply" is; is the meaning of "constant supply" high pressure as well?—No, it does not carry that; constant supply simply means that the water is always in the pipes.

5738. Under the constant supply system with hydrants, by turning on the hydrant you would get the water, would you not, irrespective of high pressure?—You would.

5739. Notwithstanding that you say that constant supply and hydrants would be of no use whatever?—No; because by drawing the plug you get the water at once.

5740. Have you got the report from the architect to the Metropolitan Board of Works, dated 25th June 1866, in which Captain Shaw's instructions were "to report to the committee as to the inconvenience at present sustained in finding water at fires, and what course he recommends for obviating the inconvenience." He says: "The course which I should recommend for obviating this inconvenience would be to discontinue the existing intermittent service, which is complicated and imperfect, and requires special men to work it, and to substitute for it a constant service, with a sufficient number of hydrants which could be opened by anyone, and would immediately deliver water without the delay of proceeding to a distance to open one sluice-cock and shut a number of others, in order that the whole of the available supply might flow to the required locality"?—That has reference to the intermittent supply.

5741. I first put the question to you, asking whether constant supply meant necessarily high pressure supply, and you said it did not?—That is so.

5742. Captain Shaw's remark here has reference to a constant supply, but not to a high pressure supply necessarily; he says that where there is a constant supply; that is where water is constantly in the pipe, hydrants would be of very great service in enabling him to get at the water more readily than he can do at present?—I do not think that is so. I think he there refers to getting at the water more readily because it has not to be turned on by the turncock.

5743. But is not that precisely the difference between having a hydrant and the present system?—A hydrant has nothing to do with that.

5744. With a hydrant, all that has to be done if the main is constantly charged with water, is for anyone who has the necessary tool to turn on the hydrant and he gets the water immediately?—And the same with the fire-plug.

5745. Is it not the fact that there are no plugs at present upon mains where constant

constant supply is given?—I believe there are plugs. You will observe in that report that Captain Shaw is speaking of a constant high pressure service.

5746. I may take it that your answer amounts to this: that if there were plugs upon constantly charged pipes, anyone could get at the water as readily as if there were hydrants, but you do not know of your own knowledge that there are such things as plugs upon constantly charged pipes?—I have made inquiry upon the subject, and I am told there are. I have also read some of the evidence given, and I gather from that that it is so.

5747. You cannot form an opinion with reference to why Captain Shaw should have specially recommended hydrants in this case, and why he should not have simply said "plugs," because he recommends hydrants here?—I believe that I am at one with Captain Shaw upon the subject, that a plug will give him the water as readily as a hydrant if he has to take it with his engine and pump it.

5748. If there is a plug there, but he cannot draw it if there is no plug there?—Clearly.

5749. I will refer you to a statement made by the East London Waterworks Company, in which they state that: "The wooden plug is placed on the services and not on the mains, because the body and pressure of water would, if it were placed in the latter, blow it out," so that that is so far contradictory to your opinion upon that question?—It is.

5750. At any rate you go the length of saying this: That a hydrant would give a much readier means of obtaining the water in cases in which the pipes on which the hydrants were fixed were constantly charged than if it was a plug with an intermittent service?—No, I think you are mixing up the two questions. I say clearly a constant supply is preferable to an intermittent supply; it does away with the necessity for a turncock; but then I say that if you have constant pressure it is quite immaterial to the fireman whether it is a hydrant or a plug; he wants the means of access to the water.

5751. Supposing it were true that you could not put plugs in the mains where a constant pressure existed, do you think that the advantages to be derived from getting readily at the water would warrant the Metropolitan Board of Works in putting down hydrants, even where they had not got the high pressure?—In many instances it would, no doubt.

5752. I suppose you do not see any objection to putting down hydrants in a district where high pressure can be obtained, even though high pressure is not obtainable over the whole of the metropolis?—I think, looking at it from the water companies' point of view, there ought to be hydrants and not plugs; but looking at it from the fire brigade point of view, I say that it is quite immaterial.

5753. But the question I am asking you is this: The Metropolitan Board of Works state that they look upon this question as a whole for the whole of London. Do not you think that it would be advisable, in districts where high pressure could be got, to put down hydrants, even although that high pressure could not be obtained over the whole area of London; that is to say, to take advantage of those districts where you could have it?—I think so certainly. I think that where there is high pressure it would be desirable to have high pressure certainly as an adjunct to the engines.

5754. In Mr. Bateman's evidence before the Committee in June 1871, with regard to the plugs, he says, in answer to a question: "The apparatus, in your opinion, is not effective for the purpose? (*A.*) It is a disgrace to a mechanical age that any such thing should exist; there are many improvements which have been introduced during the last 25 or 30 years which are much superior." Do you agree with him in his estimate of the wooden plug?—I do, from his point of view. If I were advising a water company, I should certainly advise them to put down hydrants.

5755. You stated that the firemen could readily gain access to the existing plugs, because they were marked; do you not know, as a matter of fact, that the Metropolitan Board of Works has entirely discontinued marking those plugs?—I did not know that.

5756. You spoke about Wapping Church. You stated that if you wanted water to supply nine engines there, it would require a pressure of 2,800 lbs.?—I did.

5757. But that was supposing that the district was supplied by one main,

Sir *J. W. Bazalgette.*

29 June 1876.

was it not?—No, that was supposing it to be supplied as I believe it is supplied.

5758. You have taken all the circumstances of the supply into account in giving that estimate?—The pipes are so confused that I may have taken a wrong direction; but, as far as I could tell, it is the best direction in which the water could come. I believe the water would have to be carried through 5,600 feet of 12-inch pipe, 400 feet of 9-inch pipe, and so on, and that to supply 13 engines through those pipes would take the fabulous pressure of 6,000 lbs.

5759. Did you take the actual existing pressure at that church when you were down there?—There was a pressure taken near to it, I think. In High-street, Wapping, there is a pressure of from 12 to 13 lbs., and further on of 16 lbs.

5760. A pressure of from 12 to 13 lbs., up to 16 lbs., would give a rise up to about 30 feet, would it not?—No, in all probability it would barely supply that quantity pouring out upon the ground, because the pressure would be exhausted; but if you want to throw the water through that length of hose the pressure would be exhausted in passing through that length of hose.

5761. When did you take those observations?—Those observations were taken in December and January.

5762. The observations you took were taken, I think you stated, in the day time?—They were.

5763. You did not take any observations at night, I believe?—There were a few observations taken at night in a very few places.

5764. Can you give those observations which were taken during the night; it is rather important to have them, because we find the large majority of fires occur at night?—My attention has been called to one case at Eltham Common, Shooter's Hill, where the pressure was 30 lbs. in the day time, and was gone altogether at night; there was no pressure at all.

5765. That must have been a very exceptional instance; there must have been something particularly wrong there, I should think?—I should think so. I have another near the Royal Arsenal at Plumstead, where the pressure was 60 lbs. in the day time, and 59 lbs. at night. Another, where the pressure is 61 lbs. in the day time, and 60 lbs. at night. Another, 60 lbs. in the day time, and 58 lbs. at night. Another, 62 lbs. both day and night the same; and another where the pressure was 56 lbs. day and night.

5766. The pressure all through that district appears to be very good, both day and night?—It is the highest of any.

5767. You have not taken them upon this side?—No, that is the only one we took at night. There is another case where the pressure was off at night in that district; that is, the Victoria-road, Charlton, the pressure being from 14 lbs. to 16 lbs. in the day time.

5768. Notwithstanding this small pressure, which is to be found at Wapping, which is supplied by the East London Water Company, has the attention of the East London Water Company ever been drawn by the Metropolitan Board of Works to the fact of their not giving constant high pressure through the district?—I cannot answer that question.

5769. You do not know whether the East London Water Company have professed their readiness at any time to comply with the Act of Parliament in every way which the Metropolitan Board of Works could wish?—I have no doubt that they would comply with their Act of Parliament, but the East London Water Company are bound under their Act only to supply water 40 feet above the pavement. Now, 40 feet above the pavement represents about 18 lbs. pressure; they are not bound to give more, and it would appear, in point of fact, that they do about give the pressure they are required to do by their Act of Parliament.

5770. There was not that 18 lbs. amount of pressure existing in the district you speak of. I think you stated that it was 13 lbs. or 14 lbs?—I think I may say that none of the companies are bound to give a pressure, under their present Acts, which would be available at all for using hydrants.

5771. But the water companies are bound to give a constant supply, are they not?—They are, I think, on being called upon to do so.

5772. Mr. *Onslow.*] I understood you to state clearly that for the purposes of putting out fires plugs are as good as hydrants?—Yes, I think so; that is to say, under our present conditions. With high pressure, then I think that hydrants are vastly superior, and become absolutely necessary.

5773. In

5773. In other places those plugs are becoming replaced by hydrants?—Yes; and if I were advising a water company, I should advise them to do so.

5774. Do you know of your own experience whether these hydrants in Manchester are liable to the fault you have explained to the Committee?—No; I have expressed the opinion of the engineer who knows more of them than I do. I have not had experience of them.

5775. You are not aware yourself whether there have been any complaints from the inhabitants of Manchester of a waste of water owing to those hydrants?—No, I am not aware of that.

5776. In your opinion what would be the minimum width of pipe required to give London a constant supply of water for the purpose of putting out fires?—I am afraid that is a question which it is impossible to answer. It must vary so much under all the different conditions, as I have before stated.

5777. At all events, you do not think a 3-inch pipe sufficient?—No; there are very few cases in which a 3-inch pipe would be sufficient for more than one engine; it would be an extraordinary pressure if it were.

5778. Sir *Henry Peek.*] Will you kindly refer to Question 3280. Mr. De la Hooke says: "Sir Joseph Bazalgette, in reply to the sub-committee, has distinctly given it as his opinion that hydrants for the purpose of extinguishing fires would not be of real practical advantage to the Board, unless a sufficient pressure of water were insured." And then, in reply to the next question, he says, "No, it was an advantage from any point of view whatever; not only expenditure, but utility in every way"?—That is my opinion, as I have already expressed it to this Committee, that, as far as we are concerned, to place those hydrants upon the mains would be a waste of so much money. Of course, to every rule there may be some few exceptions; there might be some places as to which I might say, yes; you would gain some advantage by placing them there, but to do it generally would be a waste of money.

5779. Do I understand that Manchester is supplied by one system of waterworks only?—It is.

5780. And the mains there, I suppose, are not like the London mains, of different diameter, but they are all large?—They are large mains; they are all capable of delivering large volumes of water without very high pressure.

5781. I think I understood you to say that generally speaking throughout London, with a hose of 200 feet long, the water would not rise beyond the surface?—That is so; the pressure would be exhausted in delivering that quantity of water through the hose.

5782. So that, generally speaking, taking London throughout, water passing through a hose of 200 feet in length would not go beyond the surface?—You may get a small jet and throw it up, but generally speaking you will not get it beyond the surface without pressure.

5783. The City, I believe, have made arrangements to place hydrants throughout the City?—I am not aware what they have done.

5784. Have they not invited tenders?—I am not aware that they have.

5785. You stated, as I gathered, that one pound of pressure was equivalent to sending water 2 feet 4 inches high?—Not to throwing it as a jet; it represents 2·3 feet rise in a column.

5786. Mr. *Clifton.*] May I ask when and where, and under what circumstances, were the tests of pressure in the pipes taken that you have already referred to?—They were taken wherever there was a hydrant or at urinals; at any place where the water was constantly on.

5787. Do I understand that the water is constantly on at the urinals at night?—I believe so; but those tests were mostly taken in the day time.

5788. Have you any reason to believe that any of the water companies knew that you were going to take the pressure?—I think some of them did.

5789. Then with regard to your calculation about Wapping Church, I think you stated that for six engines it would require a very considerable pressure?—Of 1,260 lbs.

5790. Is there any part of the metropolis where you could get a pressure of 1,260 lbs.?—No; I quoted that to show that it was impossible; to show that at that place, where the pipes were so small, if a fire occurred there, and it required six engines to work, you could not get the water through the pipes for them.

Sir *J. W. Bazalgette.*

29 June 1876.

5791. Was your object to show that there is no part of London which has a sufficient supply of water?—I am very far from saying that.

5792. If it was required at Wapping Church it might be required elsewhere?—But allow me to say that the head required is not as the square; it is as the fourth power of the diameter of the pipes, therefore directly you get a large pipe you increase your power immensely. I quoted that to show how impossible it is to send large quanties of water through small pipes. If you drop the two small pipes of five inches and three inches, it at once reduces the head of water from 1,260 lbs. to 383 lbs.; go back to the 12-inch pipe, and it would reduce it immensely again.

5793. Could you use plugs upon a 12-inch pipe?—Yes just as well as upon a 4-inch pipe.

5794. But with high pressure?—I apprehend that with high pressure you could not use plugs.

5795. You would be obliged to use hydrants in that case?—Yes, but with the present pressure existing in London generally the plugs are used, and are very seldom blown out as a matter of fact.

5796. Is the hydrant which gets out of order in London, as Mr. Rawlinson says, precisely the same in every respect as the Manchester hydrant?—I believe it is.

5797. That is the hydrant by Messrs. Bateman and Muir?—It is the same principle. Both the Guest and Chrimes and the Bateman and Muir hydrants are much upon the same principle.

5798. Sir *Henry Peek.*] There is a pressure which would burst any hose, I suppose?—Yes.

5799. What is the pressure that would burst a $3\frac{1}{2}$-inch hose. That is to say such a hose as Captain Shaw generally uses?—We are going to continue the experiments we made the other day, and I think it is very probable that we shall arrive at that conclusion before we have done, but we put on 245 feet of head, and it did not burst the hose, and I daresay it would take a great deal more than that.

5800. I daresay that that was a new hose?—It was.

5801. But with an old hose?—It depends upon the condition of the hose.

5802. Sir *James Hogg.*] You were asked some questions by Mr. Ritchie upon a report respecting what Captain Shaw said with regard to hydrants. I have it here that he reported that he thought it necessary to have hydrants which could be opened by anyone; but I would like to read to you a paragraph or two from that report. He says, "At present the regular turncocks are the only persons who understand the proper mode of working the existing water service with good effect, and I am convinced that the establishment of a constant high pressure service will be found the only mode of overcoming the difficulties, and that any attempt to improve the present arrangements will only tend to prolong the existence of a system which, so far as fires are concerned, is most imperfect and unsatisfactory." Do not you suppose that when he recommended hydrants he had in his view the establishment also of a constant high pressure service for the purpose of making them in a way useful?—I have no doubt that Captain Shaw was speaking of the high pressure constant service, and spoke of them in that connection.

5803. And when you just now stated that you would recommend hydrants for any company laying down pipes, you assumed it would be also constant high pressure service?—No; looking at it from the water companies point of view, I should say with any water supply you should lay down hydrants instead of plugs.

5804. That is to say in new work?—Yes.

5805. And not with old work?—It is quite clear that the companies do not think it worth while to go to that expense where the pipes exist already.

5806. Captain Shaw also says this: "I am of opinion that London should be provided with a constant supply of water at a height of not less than 300 feet above high-water mark; that this supply should be from a reservoir or set of reservoirs, and that it should be obtained by gravitation alone, and thus be altogether independent of the accidents and mishaps inseparable from pumping or any other process requiring the use of complicated and uncertain machinery." The principle is this, that Captain Shaw recommends that it should be by gravitation?—I cannot follow Captain Shaw in all that statement, because he says a height

height of 300 feet above high-water mark. I do not know what the height of Hampstead is, but I suppose Hampstead is getting on to 300 feet above high-water mark, and therefore if you had only that height of reservoir you would get very little pressure at Hampstead.

Sir J. W. Bazalgette. 29 June 1876.

5807. Is it not very much more desirable to have pressure by gravitation than by pumping?—It is very desirable to have a large reservoir from which the water can flow by gravitation, but you must pump to the reservoir.

5808. Was not your opinion asked very carefully by the Board; were not you asked to report upon the question of hydrants?—Yes.

5809. And you did so?—I did.

5810. Captain Shaw was also asked to make a report on the subject, was he not?—Yes. I made a report on the 8th February to the committee, as follows: "With reference to the use of hydrants for the purpose of extinguishing fires, I do not think they would be of any practical advantage to the Board, unless a sufficient pressure of water is insured, and this cannot be the case so long as the management of the water supply is under the independent control of different companies." That is a report signed by myself and by Captain Shaw.

5811. Were not you also requested to inquire into the pressure with regard to hydrants?—I was.

5812. And you reported about that?—Yes.

5813. Mr. *Forsyth.*] Captain Shaw stated, I think, that, taking the average fire hose of 2½ inches, he ought to have a sufficient pressure of water to throw it 200 feet; have you, in any of the observations you made in different parts of London, found anywhere such a pressure as with a hydrant, without an engine, would enable water to be thrown that height, or anything like it?—No, nothing like it.

5814. You know that we have put up in the Temple lately a number of hydrants?—I understand that is so.

5815. With the idea that we shall not require engines in the Temple at all; I want to know how we obtain a pressure in the Temple to enable us to do away with engines?—I cannot tell you that, but Mr. Bramwell, who will follow me, will tell you all about that.

5816. Mr. *Locke.*] How long is it since you have been to the Temple?—I have not been there very recently.

5817. You were there frequently formerly, were you not?—Yes, when the Thames Embankment was going on.

5818. Whatever arrangements there may be with regard to this water, that is by the Thames Embankment entirely?—It is.

Mr. *Frederick Joseph Bramwell,* called in; and Examined.

5819. *Chairman.*] ARE you connected with the Metropolitan Board of Works?—No, I am not. I am consulted, as an engineer, by them occasionally. I am now.

Mr. F. J. Bramwell.

5820. Have you, with Sir Joseph Bazalgette, gone into the question of the existing water supply of the metropolis with a view of testing whether the pressure was sufficient for the application of hydrants?—No, I did not make those experiments with him; that is to say, not the tabular statement which has been put in, but I have made certain experiments with him.

5821. For the purpose of testing the pressure?—With the object of giving evidence before the Committee upon the subject which the Committee are now considering.

5822. Will you state to the Committee what the result of your experiments has been?—I have examined into the question of the pressure to be maintained by the water companies in the mains, and I have done so by reference to their particular Acts of Parliament. I have them here, and can refer to them. Those pressures are very various indeed; some of them I think are definite, and some of them are certainly very indefinite; the East London Company for example is not bound to give a greater pressure than 40 feet above the level of the pavement anywhere throughout its district. I have seen the statical pressures obtained by Sir Joseph Bazalgette, which show that the

Mr. *F. J. Bramwell.* 29 June 1876.

company were following very closely that which they were bound to do, and not more than they were bound to do, by their Act of Parliament; and I may say that when the question of the fittings for the metropolis for constant supply were under consideration before Lord Methuen's Commission the water companies drew up a set of regulations which were submitted to the Board of Works; they were not approved by them, and were contested before that Commission. Those regulations were similar for the eight companies with this exception, that the East London Waterworks Company proposed thinner lead pipes than any other company. No doubt that was because they had less statutory pressure than any other company. They are only bound by their Act of Parliament to have a pressure of 40 feet. Now I am perfectly prepared to say to the Committee that, in my opinion, it would be a waste of money to put hydrants upon mains in which no greater pressure than that was to be maintained.

5823. An honourable Member wishes me to ask you what you referred to when you said "thinner"?—Those regulations were regulations for fittings, and included in the regulations was the minimum thickness that was to be adopted in pipes about the houses of different diameter. Seven of the companies said, "You shall have for a half-inch pipe such a thickness, and five-eighth such a thickness. The East London Company were willing that in their case the pipes should be thinner than those of the other companies, because they knew they had the smallest burden thrown upon them by Parliament as regarded pressure; that being the pressure, I am prepared to say it will be an absolute waste of money to place hydrants upon the pipes of that company, whether those pipes are devoted to constant supply or whether they are devoted to intermittent supply. I think there is a mistake in the minds of the public generally that constant supply means high pressure. It really has nothing of necessity to do with it; it is only a question of the mains being constantly charged; it is only a question whether you are to see the turncock turning the handle round at the beginning of a street, and some two hours afterwards turning it off again, or whether he does not come at all, and the water is always in the pipe. Therefore there is very great confusion in the mind of the public with reference to the difference between constant supply and high pressure. Then I say that the reason why it would not be expedient to expend money in hydrants upon such a pressure as that is as follows: that you do not in practice, even on a calm day, get more than about five-eighths of the height of the head as a jet as solid water. I do not mean spray, but useful effective power. Five-eighths of 40 feet is 25 feet; so that even assuming that you get at the nozzle of your branch, the whole 40 feet of pressure, it would enable you to throw a jet of only 25 or 30 feet of solid water, and not more, on a calm day, but that pressure has to be reduced by the friction in the hose itself. Now one knows very well indeed, the rules being very well understood, what is the friction through metallic pipes, but I did not know, I could only guess, what was the friction through hose. It might be different; therefore, since the last meeting of the Committee, Sir Joseph Bazalgette, Mr. Easton and myself have been down to the South Essex Waterworks at Grays, where they pump the water from a well in the chalk in the bottom of a chalk pit, sheltered from the wind. They pump into a distant reservoir competent to give them 500 feet of pressure; we there put up an apparatus consisting of a regulating cock, a water meter, and a pressure gauge, and we had various lengths of hose and various sized branches, and by these means we were enabled to determine with accuracy what was the pressure which was driving the water out, and what was the quantity of water which was going out; and, making use of the engine chimney, the height of which was known, as our standard, we were able to see to what height the jet would reach. I am sorry to say that we only knew the total height; it was not marked from 10 feet to 10 feet, and, therefore, we were compelled, to a certain extent, to guess at the height to which the jet did reach, but I have no doubt that we were right within a few feet. The result of these experiments is, that when delivering 150 gallons a minute through a $2\frac{1}{2}$-inch hose, every foot length of that hose reduces the pressure by a quarter of its own length, or 3 inches head of water, so that 200 feet of hose reduces the pressure by 50 feet head of water; that is to say, 200 feet of hose takes off, when delivering 150 gallons a minute, 10 feet more pressure than the East London Water Company by Parliament is compelled to maintain at

at all; of course if you deliver a smaller quantity the reduction becomes very much less. The reduction in pressure varies with the square of the velocities; if you, therefore, are delivering only 75 gallons instead of 150, you would, instead of taking off 3 inches take off only three-quarters of an inch for a foot; instead of taking off 50 feet in 200 feet of hose, you would take off only 12½ feet; but I am pointing out what would be the result of passing 150 gallons a minute of water through a hose and out of the branch. Now, in my judgment, hydrants may be looked upon as having two objects, one of them a very principal and important one, and the other, to my mind, a very subsidiary and unimportant one. The principal and important one is that they shall operate as fire-engines to enable a fire to be extinguished by applying hose to them. The subsidiary, and I think comparatively unimportant one, is that they are a better mechanical contrivance for getting water out of a main to feed a fire-engine than a fire-plug is for getting water out of a main to feed a fire-engine; and what I say is, that although they are better in that respect, I attach but little importance to that, and I think that it would be very improper for the Board, as guardians of the ratepayers' interests in the metropolis, to incur that expenditure for putting down hydrants if the benefit to be obtained were merely to be the more ready-getting of the water to supply steam fire engines.

5824. There may be a point between the two in which they come, though not to supersede, to assist; that is to say, supposing your pressure, though not sufficiently great to reach the height which you may have to send the water, was sufficient to reach say the second floor of a building, they might supplement the use of engines very often, might they not?—Am I to suppose that the engine is on the spot or not?

5825. That the engine is on the spot?—Because if the engine is on the spot, I am prepared to say they would injure rather than assist, and I would like to put it to you in this way.

5826. Will you allow me to explain the real motive of my question. It is, that it has been stated to the Committee that it would be a great advantage to place in the hands of the police, or other bodies of men who are always upon the spot, the means of supplying, through a hose, a certain amount of water to a fire before the engine arrives?—But I daresay there was in the mind of the speaker who gave that evidence the assumption that there should be an adequate pressure to produce that flow. I am dealing only at present with the East London Water Works Company, and its 40 feet of pressure, and I am endeavouring to explain that that would not be an adequate pressure, because I should tell you that this 40 feet of pressure is statical pressure, as Sir Joseph Bazalgette explained, when there is no draught upon the main, but of course a draught upon the main reduces that statical pressure before it enters into the hose. The reason why I state that it would be a detriment that there should be a hydrant working when there was a steam-engine working upon the ground ready to pump the water is this, that if you can give an engine water enough, it will of itself find the pressure; but if you had a hydrant working, and ineffectually endeavouring to send water up to the second floor, that water is going away in waste, and it is abstracted from the engine, which, if it had utilised it, could have made a jet of it to any required height. Now, I know it has been said, or the inference has been drawn that where there are hydrants any person can operate upon them, and that where there are fire-plugs any person cannot operate upon them. I do not believe that that is so. The firemen carry the requisite tools for the purpose of taking the plug out of its seat. The firemen or the police might carry the requisite tools for coupling with the hydrant. There is no doubt some waste of water with a plug, as against the hydrant; that is a question for the water companies, not a question of the extinguishing of fire. Now, I am aware of what Captain Shaw has said in a public document, that plugs are difficult to find, and hydrants easy to find. You discover, when you look at the document and the drawing attached to it, that his proposition is confined to stand-posts in the pavement, which you could not help finding; but that is not the kind of hydrant that is to be made for a few pounds. If you supply a hydrant of that kind all over London, it will entail a very heavy expenditure. It may be worth while to incur that expenditure where there is proper pressure, but I am certain it is not worth while to incur it where there is not.

5827. I suppose what was meant by Captain Shaw, when he said it would be

Mr. *F. J. Bramwell.*

29 June 1876.

an advantage, was that the men of the fire brigade are not always aware of the other arrangements besides the getting out of the fire-plug; namely, the way in which the water is turned off in different directions; and that they would, under the system of hydrants with which Captain Shaw connects the system of constant supply, be able to make use of them without reference to those water arrangements?—I think there is an error in that respect. Then I must now import into the consideration the question of constant supply and of intermittent supply; and I will, first of all, assume that we have an intermittent supply, as at present, and that it is desired, where there is a fire-plug, to abstract that plug to obtain water for an engine. The plug can be abstracted either by the turncock or the fireman with equal ease, but when abstracted it turns out that there is water being drawn off from the main to supply the district in the neighbourhood with their ordinary domestic supply of water, and that accordingly a very small quantity comes out of the orifice. It then becomes the duty of the turncock to shut off those other supplies, so as to concentrate the delivery upon this fire-plug. Assume that you have a hydrant in lieu of the fire-plug, the hydrant could be opened as easily, but no more easily, than the plug, and when opened no more water would come out than would come out of the hole where the fire-plug was. That is under the intermittent supply. Now I will take the constant supply, and I would say that if there is a constant supply upon the district the hydrant would be opened, if there, by the fireman or any other person, and the water supply would, if the pipe were large enough, flow in proper quantity; but that is equally true of the fire-plug.

5828. But, with regard to that, is it the case or not, as has been put before this Committee by certain witnesses, though Sir Joseph Bazalgette states that he believes it is not the case, that fire-plugs, as applied to constant supply, are practically so liable to be driven out by the pressure that they are never put down?—Let me give you, again, the case of the East London Waterworks Company, with its 40 feet statutus pressure above the pavement. Whether the fire-plugs are upon pipes charged continuously or intermittently, or upon mains which are charged continuously or intermittently, they will be only subject to a pressure which would give a few feet of flow, and would be perfectly under control as fire-plugs, and I have not the least doubt, although I do not speak of my own knowledge, that they would be so placed.

5829. Can you give the Committee the pressure of the other companies?—I did not know I was going to be called this afternoon. I have them here, and I have them also tabulated, but I cannot lay my hand upon the paper. If it will suit the Committee I should be glad to resume my evidence on Monday, as there is some information I wished particularly to obtain, and I could not complete the investigation up to the present moment.

Monday, 3rd July 1876.

MEMBERS PRESENT:

Mr. Clifton.	Sir Andrew Lusk.
Mr. Forsyth.	Mr. Onslow.
Mr. Hankey.	Sir Henry Peek.
Mr. Hardcastle.	Mr. Ritchie.
Mr. John Stewart Hardy.	Mr. Stevenson.
Mr. Hayter.	Mr. Young.
Sir James Hogg.	

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

Mr. *Frederick Joseph Bramwell*, called in; and further Examined.

Mr. *F. J. Bramwell.*

3 July 1876.

5830. *Chairman.*] WE left off on the last occasion when you were prepared to give the pressure of the other companies; is there anything you wish to state, previously to giving that?—Before doing that, I may say that you asked me a question with reference to whether I thought fire-plugs, not hydrants, were competent to be used upon constantly charged mains. I told you I believed they were, but that I had not absolute knowledge on the matter, but may I now say that at Liverpool, where the pipes are under constant supply from the Kensington reservoir, 218 feet above Ordnance datum, the whole of Liverpool being now under constant supply, there are 208 fire-plugs on leading mains and 2,978 fire-plugs on distributing mains.

5831. Whatever number there are, it proves that the pressure does not prevent their use?—Quite so. I know that the number was reported upon in that pamphlet of the Metropolitan Board of Works, but I telegraphed to Mr. Deacon, the engineer, since the Committee met, and he has telegraphed to me and subsequently has written a letter. My telegram was, "What is the present number of fire-plugs, not hydrants, upon mains supplied from the Kensington reservoir?"

5832. Are those the ordinary fire-plugs, such as are used in London?—I am told that some of them are iron plugs, and not the ordinary wooden plug. It was a novelty to me, but nevertheless they are of similar construction to our own plugs; that is to say, like a cork put into a bottle not screwed down.

5833. And notwithstanding that, and that they have a much higher constant pressure, they are useful, and are not blown out?—Here is the letter. He copies the telegram. The telegram was, "Fire-plugs on leading mains, 208 usually, in sets of three; fire-plugs on distributing mains, 2,978, chiefly for washing streets." Now, I have stated to the Committee that the pressure of the East London Company need not be more than 40 feet above the pavement. This appears from Section 63 of the Act of 1853, repeating Section 55 of the Act of 1852. Cisterns are obligatory, as appears by Section 64 of the Act of 1853, and high service is to be paid for when the water is delivered at more than 20 feet above the pavement. That is the condition of the East London Company. The New River Water Company, by Section 28 of their Act of 1852, need not give a constant supply until the expiration of five years. The delivery need not be at more than 70 feet above the pavement, or at more than 300 feet above Trinity high-water mark. Cisterns, by Section 29, are obligatory, and high service is charged for, by Section 36, at a greater height than 10 feet above the pavement; and also all services, when more than 160 feet above Trinity high-water mark, may be charged for at an extra 1 per cent.

Mr. *F. J. Bramwell.* 3 July 1876.

Now, those are the two companies where the pressure above the pavement is determined, namely, 40 feet, in the case of the East London Water Company, and 70 feet in the case of the New River Company, with the exception I have pointed out, when the houses are more than 300 feet above Trinity high-water mark. But when we come to the other companies, you will see, I think, that there is no stipulated pressure above the pavement. The next water company I will take is the Chelsea Waterworks Company. The Chelsea Waterworks Company, by Section 54 of the Act of 1852, need not give a greater level than can be obtained from their reservoir, which shall not be less than 148 feet above Trinity high-water mark. Therefore, depending upon the size of the pipes which bring down the water from the reservoir, and depending upon the elevation of the houses above Trinity high-water mark, so will the reduction be from that 148 feet; and I may say that in the case of the Chelsea Company, taking the contour map, which I have here (*producing the same*) as my guide, Mylnes map, published some time ago, showing the water companies and showing the contour, in the Chelsea case the height of the streets varies from zero to 70 feet above Trinity high-water mark. The 70 feet, in any event, has to be deducted from the 148 feet, but when water is being drawn off there is to be further deducted such a pressure as is competent to make the water run through the pipes with the desired velocity. Therefore that really tells you nothing as to what the pressure would be above the pavement at any particular place; they charge for high service when they get it more than 10 feet above the pavement. The next company is the Kent Water Company, and with respect to the Kent Water Company I find myself unable to say what their obligation is. I cannot find it from the Act; but I find that with respect to the district formerly supplied by the North Kent Company, which they purchased, and the Act of Parliament for which is scheduled to the Act of 1864, the 56th section of the old Act, which is in the 2nd schedule, is retained, and that states that the water need not be constantly laid on under a greater pressure than the pressure to be afforded from the pipes of distribution from the reservoirs hereinbefore described. There is no stipulation with reference to the size of the pipes of distribution, and therefore the pressure may be anything from equal to the reservoir down to zero, varied again also by the elevation of the particular streets, and that elevation varies from zero to 412 feet at Shooter's Hill. I have no doubt they have steam power for the purpose of supplying that level, but I am speaking now, not of what the companies do to supply their customers, but of what they are compelled to do by Act of Parliament. Whether that particular stipulation with reference to pressure applies to the whole of the Kent district, or whether it does not, I am unable to discover from the Act of Parliament. I have either overlooked the clause or I am unable to discover it when I read the Act. The next company is the Lambeth Waterworks Company. By Section 35 of their Act of 1848, the pressure need not be greater than the height of water in their present reservoir will give, nor in any case more than 150 feet above Trinity high-water mark.

5834. Mr. *Onslow.*] Where is the reservoir?—It does not say; it was the reservoir of 1848, not the reservoir of this date. The elevation of the Lambeth Water Company's district of supply varies from zero to 350 feet at Sydenham. No doubt the Lambeth Water Company, in order to suit their customers, do provide a proper special service, but that is not their statutory obligation, and that is without any stipulation with reference to the size of the pipes. The next company is the Grand Junction Water Company. By Section 4 of the Act of 1861, repeating Section 41 of the Act of 1852, they shall not be required to supply under pressure at a higher level than 150 feet above Trinity high-water mark at Vauxhall Bridge; and the Southwark and Vauxhall Company is not required to supply at a higher level than 150 feet above Trinity high-water mark at Vauxhall Bridge.

5835. Mr. *Ritchie.*] You gave us in the case of some of the companies what the highest point in their district above high-water mark was. Can you give it us in the case of those two last companies?—I am going to do so; but I am giving these three together for the reason that they are under a particular state of things which I wished to explain to the Committee. The last of the companies is the West Middlesex Company. This company shall not be required to supply

supply under pressure to any higher level than 200 feet above Trinity high-water mark at Hammersmith Bridge. Now, I do not know from reading these sections whether the obligations of the companies will be satisfied by keeping in the case of the Grand Junction, and the Southwark and Vauxhall Bridge Companies, 150 feet pressure at Vauxhall Bridge, and in the case of the West Middlesex Water Company 200 feet pressure at Hammersmith Bridge, or whether throughout all their districts they are to keep up a pressure equal to that.

5836. *Chairman.*] That word "at" being the difficulty?—I do not know what it is. The engineers of the companies are coming to give evidence, and they can tell you. My own impression is from what I think I know of their works, that they interpret the Act as calling upon them to keep that pressure at those particular places.

5837. And not over their whole district?—Not over their whole district, but it is only an impression, and I should like that to be corrected by the engineers of the companies when they come to give evidence before this Committee. Then to go back to the question of levels. The levels of the Grand Junction Company appear to vary.

5838. Mr. *Forsyth.*] Is the Trinity a datum level?—The Trinity high-water mark is the datum.

5839. Where is it, as a fact?—Twelve feet 6 inches above Ordnance datum. Trinity high-water mark is one of the heights which is commonly taken by water engineers as their datum line. The Ordnance datum is the datum taken by railway engineers, Trinity high-water mark being 12 feet 6 inches higher than the Ordnance datum, the latter being supposed to be the mean-tide level.

5840. Sir *Henry Peek.*] Trinity water mark is the high-water mark?—Yes.

5841. Mr. *Onslow.*] Is that the Thames high-water mark?—I would rather take 12 feet 6 inches above the Ordnance datum, the Thames high-water level being so various. Then, to go back to the question that was asked me, the Grand Junction Company's district varies from about five feet above Trinity high-water mark to 85 feet at Campden Hill; the Southwark and Vauxhall Company's district varies from zero to about 150 feet in the neighbourhood of Nunhead.

5842. *Chairman.*] That is the same height as they are bound to keep above Trinity high-water mark, is it not?—Yes.

5843. Mr. *Ritchie.*] Is Nunhead within the metropolitan district?—Yes, it is within the district of the Metropolitan Board of Works, and I may tell you that they have recently made a reservoir upon that very hill. Then, with regard to the West Middlesex Water Company, their district appears to vary from zero to about 180 feet above Trinity high-water mark at Kilburn. That information with reference to levels is derived from this map, published by Mr. Mylne as long back as 1851, I think, showing the district of supply of the different water companies, and having contour lines at every 10 feet measured above Trinity high-water mark in the various districts. What I have done is to look over the map to ascertain that the measurements I have given are correct. (*The Witness explained the map to the Committee.*)

5844. *Chairman.*] You have stated, in regard to each company, that the heights in the districts vary so considerably, as in some cases to come up to the amount of pressure they are obliged to give, or even to exceed it. Have you formed any idea with reference to the amount of each particular district at those particular heights?—No, I have not; it could be readily gathered from the map, because a map of that sort gives you the areas.

5845. *Chairman.*] It would be possible, upon an area of that kind, to place hydrants upon a portion, although you could not upon the whole, would it not?—If it were thought expedient no doubt it would be possible to do so.

5846. Before we leave the subject, have you any knowledge with regard to the amount of pressure which the different companies do give, or should we get that more correctly from their own engineers?—I think you would get it more

Mr. *F. J. Bramwell.*

3 July 1876.

correctly from their own engineers, otherwise you get it from Sir Joseph Bazalgette's experiments, subject, of course, always to this difficulty, that you do not know what amount of water was being drawn off in the neighbourhood of any of those places at the time the observations were taken. I am sure I need not point out to you this, that in a place where no water whatever is drawn off, we know at once what the pressure will be; it will be exactly equal to the level of the reservoir or stand pipe giving the head; but that is almost useless information, because what we want to know is what the pressure will be when the water is being drawn off.

5847. What made me ask the question was this: In Mr. Quick's evidence, before the Committee of 1862, I see that the pressures given are very different from the fixed pressures mentioned under their Acts. He stated, with regard to the Southwark and Vauxhall Water Company, that the pressure above Trinity high-water mark was 186 feet instead of 150 feet, which the Act prescribes?—I should think it very likely to be so, otherwise I do not know how he is going to supply his high districts.

5848. I wished to know whether you knew what the pressure of the different districts actually was?—I do not know. I suppose nobody can tell you that except the engineers of the water companies. All I tell you is, what I read they are bound to do by their Acts of Parliament.

5849. Would it be a difficult thing to put before the Committee at some future time a plan how far those heights vary in the different companies' districts; that is to say, where the heights which the company have to supply vary from zero to say 150 feet throughout their district, could it be shown how they varied, say in tens of feet?—This very map does that; but this further information could be added by making a tracing from that map. You might show to the Committee by different colours, how in each company's district the heights vary 10 feet at a time, and also you could very readily calculate the acreage of any particular band of colour.

5850. Thus showing that up to a certain point it would be possible, and that beyond that point it would be impossible to work hydrants if that were wanted?—Yes, or at all events giving the Committee information which would enable them to form their own conclusions. That would be quite possible.

5851. And not so difficult but that it might be prepared?—Certainly.

5852. As I understand you, whilst not being able to speak to the actual amount of pressure given by the different companies, where it is above their statutory obligation in any degree, you are aware, I suppose, that they are giving a larger amount of pressure in order to meet their customers' wants?—I know that they are, most of them, raising water to a higher level in order to meet their customers' wants; but I am by no means sure that therefore they are giving a higher pressure. That sounds paradoxical, but will you allow me to explain it. For anything I know, I think it is extremely probable that they have made their district into zones. Supposing, for example, they have a district which averages 50 feet above Trinity high-water mark, a certain head above Trinity high-water mark would supply that. Then they may have another district which will average 100 feet above Trinity high-water mark; a certain higher pressure must supply that, but I think very likely you will hear that they separate those two districts into zones, and that the lower district does not get the pressure that you would have in the upper one.

5853. And that supplying all the districts together you would not get a mean pressure which would be much in excess of their statutory obligation?—I think very likely that would be so. I think the fact of giving a higher pressure to a higher district by no means involves that the lower district has got the extra benefit.

5854. Mr. *Forsyth.*] The level would not require it, would it?—It depends upon what you want it for; if you wanted it for a fire hydrant I would say yes, but if for domestic purposes I would say no. I would observe, as a sort of *resumé* of this statement of the statutory pressures of the different companies, that there are only two out of the eight who are bound to give any particular pressure above the pavement; the others are pressures above a datum, and not a pressure above the pavement of the street. Those two are the East London Waterworks

Waterworks Company with its 40 feet, and the New River Company with its 70 feet, provided that the place supplied is not more than 300 feet above Trinity high-water mark, or rather, I imagine, 230 feet above Trinity high-water mark, because I suspect that the 300 feet includes the 70 feet, but I am not sure. Now these pressures which the companies are bound to give, be they what they may, are pressures for domestic supply; they are not pressures for fire service. Fire service I believe to be something merely ancillary to the domestic supply, and not to be the object for which the companies are incorporated. Now Captain Shaw, I believe, has stated that he requires as much as 2,000 gallons of water a minute to be concentrated upon a fire within a range of half a mile; 2,000 gallons a minute is equal to 2,880,000 gallons for 24 hours, which, therefore, is equal in round numbers to 1-42nd of the whole supply of the eight companies of London in the month of May last. It is concentrating upon one point of the metropolis 1-42nd of the whole supply of the eight companies.

5855. *Chairman.*] Supposing that supply to be kept up 24 hours?—However long you do it, it is at that ratio. Now supposing the whole of the eight companies gave an equal delivery, which we know they do not, it would amount in round figures to one-fifth of the delivery of each company, but if we take the case of the Chelsea or the Kent Water Company, such a demand amounts to one-third of their total supply. Therefore Captain Shaw's demand on the Chelsea Company, or upon the Kent Company, are that they should give at a particular spot, in the event of fire, as much water as represents in proportion one-third of the whole of the water supplied to their district.

5856. Mr. *Hankey.*] Of the whole that they give in the 24 hours?—Supposing it pleased Providence that a fire should last 24 hours. The company do not give the whole of their water to their customers in a minute or in an hour; it is true it is not diffused equally over 24 hours, but if you do take the daily delivery of any one of those companies, and then take the demand for 2,000 gallons a minute within half a mile, that will amount in 24 hours to 2,880,000 gallons; the ratio therefore is as I say in the case of the Chelsea or Kent Water Companies equal to one-third of the whole of the supply over their whole district, and I may add in the case of the New River and East London Water Companies equal to about one-ninth.

5857. *Chairman.*] That is to say one-third of their actual supply during the time the water is being called for?—Yes, during that time that is the demand made upon the company by a request for 2,000 gallons a minute.

5858. That is the present supply, being intermittent and only drawn upon at certain intervals?—For the purposes of my comparison that is not so, because I compare it with the whole delivery of the company.

5859. The whole actual delivery?—Yes, the whole actual delivery taken from Major Bolton's return for the month of May.

5860. That is, taking what Captain Shaw states as his speculative want, because the actual demand for water is described by the amount of water which has been consumed in past years, for the purposes of fire, and 2,000 gallons a minute is a very small amount?—Yes, but the fires are not burning day and night continuously, and having that quantity of water thrown upon them rateably, that is the demand which he makes when a fire occurs; he says, I want that quantity of water brought to my engines, or to my hydrants if I have not got engines, and I want to point out to you what an extremely serious proportion that is of the supplying powers of the companies.

5861. Has there been any opinion formed with reference to what amount of water is at present used for a fire as compared with what Captain Shaw says he wants?—I understood, but the Committee have heard his evidence, and I have not heard it, that that was what had been obtained at several large fires where 10 engines were at work. If the companies had such mains as that they could deliver their daily supply in five minutes; it would not be the proper thing to take this comparison, but they cannot; they have only a certain arterial power of delivery, and I wished to point out to the Committee that Captain Shaw's demand involved this large requirement upon the total powers of delivery of the companies. In the mouth of May the total quantity of water delivered to the metropolis was 121,000,000 gallons a day; if you take 2,288,000 gallons and make a fraction of it, you will find that it comes to 1-42nd.

Mr. *F. J. Bramwell.*

3 July 1876.

5862. Mr. *Stewart Hardy.*] I would ask you whether that only represents what the companies deliver and not what they have the power to deliver?—I have no doubt there is a margin; that is what is delivered.

5863. That is a very different thing from the power of the water companies?—I do not think it is a very different thing, because you must remember that the month of May is a month in which there is a very considerable demand, and the companies do not embark more capital than they can help.

5864. *Chairman.*] But it is given at different times of the day, and it does not follow that if you wanted this quantity suddenly, to meet Captain Shaw's views, you could not stop the supply which might then be in process, and give it at a later period?—That I am coming to presently. Owing to intermittent delivery it is given at different times in the day, but that will be because one district gets it at one time of the day, and another district at another, so that the leading mains are delivering pretty constantly throughout all the hours of daylight. I wish to point out what an important bearing this large quantity drawn off at any one point has in diminishing pressure; that is really the gist of my observations. If a given pipe of a given length, say a mile of pipe of any size, requires a certain head of pressure, lbs. or feet, to deliver 100 gallons a minute, it will require four times the pressure to deliver 200, 16 times for 400, and 400 times to yield 2,000 gallons, simply going up as the square of the deliveries. One sees, therefore, what an enormous augmentation of pressure is required for the purpose of getting a large local delivery, and that augmentation of pressure can only be got by a reduction of the outlet, as you have not the means of giving anything like that requisite increase at the inlet. Take, for instance, a mile of 6-inch pipe; to deliver 100 gallons it would only require about 8 feet head; to deliver 2,000 gallons would require 2,300 feet head. If you take a 12-inch pipe where 100 gallons might be delivered by a quarter of a foot head per mile, to deliver 2,000 gallons you would require 100 feet head for every mile of that 12-inch pipe.

5865. Sir *Henry Peek.*] Do you mean to deliver at a level or at a height?—Upon the level; if you wish to deliver it at any height you must add the head to the height; if you wish to deliver it at 10 feet you must add the 10 feet to the head, whereas if you wish to deliver it on a level you add nothing; I do not want to use scientific terms, but I may say, as is well known, that the loss of head to produce flow varies inversely as the fifth power of the diameter; that is to say, if you have a pipe of one diameter instead of a pipe of two, and if you want to make the same quantity flow through a given length of pipe of one as you want to make flow through an equal length of pipe of two, if a head of one would do it, in a pipe of two, it will be the fifth power of two, which is 32, in the pipe of one; that is to say, it will take 32 times the head to get the same quantity of water through an equal length of pipe of half the diameter; and may I follow that up by saying that with equal head the delivery varies as the square root of the fifth power; that is to say, if you have got a head of one foot sending water through a pipe of two diameters, and a head of one foot sending water through a pipe of one diameter, the pipe of two will deliver the square root of 32, or in round numbers 5^5th times the quantity of water which the pipe of one will deliver. I have given this statement for the purpose of showing the enormous influence of the friction through pipes in diminishing the statutory pressure. Now, I will assume that in the case of the West Middlesex Water Company their obligation to give 200 feet pressure above Trinity high-water mark at Hammersmith Bridge, means not only Hammersmith Bridge, but means at a level equal to that throughout their district; I do not think it does, but I assume it; I now assume that we are in a street 50 feet above Trinity high-water mark; 50 feet has gone at once from the 200, leaving 150; we want 50 feet of jet; that requires 80 feet of pressure at the nozzle; 80 feet from the 150, leaves 70; we want 200 feet of hose, and that 200 feet of hose will take off another 50; that leaves 20, and that 20 would represent the only force available to drive the water through the iron pipes to the hydrant, but 20 feet would be a very poor head to do that; if the place were situated at any considerable distance from the waterworks, 20 feet of head would be absorbed in one-seventh of a mile of 4-inch pipe.

5866. *Chairman.*] Are the mains as small as that?—Branch mains are not leading

Mr. *F. J. Bramwell.*

3 July 1876.

leading mains, but I am only taking 150 gallons and one jet. I would like now to say something about the number of hydrants required, and to arrive at that result, I would take the number in Manchester, excluding Salford, as stated in the pamphlet, and the population of Manchester, excluding Salford, and I would compare that with the population of London, and in that way it would come to about 100,000 hydrants required for the whole of London. Then the Corporation of the City of London I know are preparing to place hydrants in the City. I believe they contemplate, as far as I know at present, about 900 hydrants for the square mile area of the City; that would be about 105,000 for all London, taking it by the square mileage. The Temple authorities, as I know, have within the last year placed hydrants through the Temple; they have 36 hydrants. Including the garden, I think, the Temple is about 10 acres; that is about 3½ hydrants to an acre, which will work out to about 2,000 to the square mile. Therefore, I think, when I say that 100,000 hydrants will be required, I am by no means taking an excessive number. Captain Shaw, I may mention, in that pamphlet headed the Superintending Architect's Report, proposes hydrants at every 100 feet on both sides of the street.

5867. The City authorities place them further apart, do they not, in their present scheme?—I can only give you the total number. I do not know at what distance they place them, but I am now going back to the remarks of the superintending architect. You will find there that Captain Shaw, at pages 12 and 13, proposes to place them at every 100 feet apart but upon both sides of the street, making them 50 feet apart, measured along the street; that, I think, you will find would come out to 150,000 hydrants.

5868. Mr. *Hankey.*] Would that be independently of the City of London?—No, including the City, I presume; that is what Captain Shaw states in that pamphlet. Now, if you take only 100,000 hydrants, what the cost of them is going to be I do not know how to tell the Committee. I do know that the Corporation have at the present time laid down the mere services for the hydrants and not the hydrants themselves, and they appear to have spent 1,212 *l.* in laying down branches for 93 hydrants; they laid them down at a time when they were about to repave the streets, so as to save the cost of special re-paving, and yet those services come out to 13 *l.* each.

5869. *Chairman.*] Their specification placed them at a little over 10 *l.* per hydrant, did it not?—But that was leaving out the services, I think.

5870. Sir *James Hogg.*] Independently of the stand posts and other work?—Yes, whatever their estimate may have been; here is the return (*producing the same*). Up to the present time those 93 branches ready for the hydrants, as I say, have cost 1,212 *l.*, being, as the report says, in excess of the estimate, and I work that out at 13 *l.* each, although pains were taken to lay them at the time when the streets were about to be repaved. The engineer's estimate for the hydrants proposes to have them of two kinds, one which would be suitable for street washing and for fire purposes, and the other for fire purposes alone. I take those for fire purposes only; he talks of 368 *l.* for 49 hydrants, which is 7 *l.* 10 *s.* each, making services and hydrants together come to about 20 *l.*

5871. *Chairman.*] You have of course heard, or probably seen the report which has been presented to the Committee with regard to the expense of laying down hydrants in Manchester?—I have.

5872. Are you aware that there they estimate the expense, covering all expenses, even to the breaking up of the streets and laying down the streets after having placed the hydrants upon the mains, at a sum which is under 6 *l.* per hydrant?—Manchester puts the expense at under 6 *l.*; Liverpool puts it at 6 *l.*, including every expense; I am told that it appears that the Corporation of the City are about to spend, from first to last, about 20 *l.* per hydrant, but at the same time I am going to tell you that I did not propose to put that as the estimate of the cost for the 100,000 hydrants all over the metropolis. I think we may be safe in putting it at half; that is to say, I do not think you can reckon upon supplying the whole area of the metropolis adequately with hydrants under a million of money; that is to say, for hydrants and their connections, and the repaving and other expenses.

5873. That is 100,000 hydrants at 10 *l.* a piece?—Yes. Where you have to

Mr. *F. J. Bramwell.*

3 July 1876.

put them down in places of crowded traffic, places which you desire to interrupt as little as possible, and where the work must be done at night, you would have to pay a very much larger sum; but where you lay them down in suburban places, a smaller sum would be requisite.

5874. Has that estimate been formed upon any particular kind of hydrant?—No; because nobody appears at present to have settled what is the best kind of hydrant, and what would satisfy the water companies.

5875. Would not that appear to be a part of the question, because the Committee have had evidence that the price of hydrants varies from 2 *l.* or 3 *l.* up to 19 *l.*?—Yes, I think it would; but I think that whatever hydrants are put down they must be such as would satisfy the London water companies. I must leave it to you to hear them as to whether they will be satisfied with those 2 *l.* hydrants. I fancy the Corporation of London are wise enough in their generation, and would not fool their money away, and we do not find them adopting the 2 *l.* hydrant. Now, as regards the Temple; I mentioned that they have put down 36 hydrants. May I tell you that before they thought they could do it efficiently they put an entire new main through the Temple, from one end to the other, a 7-inch main coupled to the 12-inch main in Fleet-street, and coupled to a 7-inch main in Whitefriars, so as to be fed at both ends.

5876. Where is the reservoir?—They are supplied by the New River Company, which gives 70 feet of pressure above the pavement.

5877. Have you tested the hydrants placed in the Temple?—Yes, but not with the proper test; that is to say, we had no meter on so as to say what quantity they were delivering, but only an elevation test.

5878. What was the elevation?—I should say that the elevation was from 50 to 60 feet.

5879. Was that experiment continuously?—It was for as long as we thought it right to try it. People do not like their roofs played upon for long.

5880. Upon the main now placed in the Temple, that is to say, the 7-inch main fed at both ends, it gave a supply which would do away with the necessity of an engine?—Yes; I think these hydrants placed in the Temple are extremely useful and valuable.

5881. Will you forgive me for interrupting the course of your remarks; there are, as I understand, a very large number of hydrants placed in private establishments throughout the metropolis; the number is 2,077 within the buildings themselves; those, I suppose, are capable of giving such a supply as would be serviceable in case of fire, that is to say, giving a jet for extinguishing a fire without the use of an engine?—I presume they are, but I should like to know what company supplies them.

5882. The report states that there are 2,077 scattered through London in the buildings, and I imagine the private individuals who have gone to the first expense of placing the hydrants there would not have done so if the supply of water had been likely ever to be what you have represented it might be, that is to say, that that head could not be obtained for the purposes of hydrants if drawing was taking place at other parts?—I do not know that that follows; it appears to me that a man who has a warehouse, with a first floor 20 feet above the pavement, may well put down a fire cock and play a jet at only a few feet of elevation within the very floor itself, but that is a very different thing from having a hydrant in a street required to throw a jet into and over the building.

5883. Then we go to the other districts, in which there are a certain number of hydrants, 269, already put down in London for public use; those, I suppose, would not have been put down, and are not kept upon the main, without having some guarantee that they would be of use?—I should like to have the particulars of them; if they are hydrants in the low-lying districts of the New River Company, then they would, no doubt, be very useful.

5884. They are in the Kent Water Company's district?—I do not know much about them; but in the north portion of their district their obligation is really nil.

5885. What the Committee have had in evidence to show is, that in the Deptford and Woolwich districts of the Kent Water Company, hydrants have been fixed to some extent, and that those hydrants have been called into play for

for 23 hours at a fire, with a couple of hose attached to them, and have been perfectly efficient?—I may point out that Deptford and Woolwich are both of them consistent with elevations only a very few feet above high-water mark.

5886. Therefore that would not interfere with what you have stated?—I think not. In the Temple, you have property lying a very few feet above high water, and you have that locality supplied by a company which is bound to give 70 feet of pressure above the pavement.

5887. Mr. *Onslow.*] Do you know exactly the height of the Temple?—The Temple itself is a hill, but I should think the height would vary from about five feet or six feet to 26 feet above Trinity.

5888. *Chairman.*] There is a small portion of the New River Company's supply which, probably, is in the same zone as the Temple?—No doubt.

5889. To which equally hydrants might be applied?—Quite so. Take the lower part of the City of London, Thames-street, and so on.

5890. Wherever a head of that sort could be given, that zone might be for the purposes of the fire brigade improved by the application of hydrants?—I am by no means sure of it. I do not know what their pipeage is. I do not know the size of the pipes they have those hydrants upon, but in the City, seeing that it is only three-quarters of a mile from north to south, it would be an easy matter to lay there arterial mains to give an adequate pressure upon the pipes. The value of the property in the City is so enormous that it might even pay the company to do it, because I believe they are not charging their maximum rates upon the rentals, and a very small addition to the rental charge in the City of London would give a very large additional sum of money. Now with regard to the value of hydrants, if they were applied under existing circumstances to extinguish fire. I should like upon this point to refer to a pamphlet by Captain Shaw, entitled "Instructions concerning Air and Water." It is published for the firemen; I do not know whether it has been before the Committee. The Committee are probably aware that the brigade have stand-pipes which can be inserted into the fire-plug holes, and that when so inserted they are to all intents and purposes the same as hydrants for the purpose of attaching hose. Now in that pamphlet Captain Shaw says, "For the reason already assigned," and the reason he has assigned is the absorption of the water for domestic requirements, "it is usually unsafe to trust to the pressure of the pipes in London during the early stages of a fire, and the custom is to let such water as is delivered on the ground level run into a dam, from which a pump can be supplied; and after a fire has been in some degree subdued, then to remove the dam, and insert a stand-pipe for cooling the ruins." And then he goes on and says, "Cases occur when it is almost certain that the pipe is under sufficient pressure to do the required work, and when, nevertheless, a fireman will, without a moment's hesitation or delay, allow the water to run into his dam, and pump it out again with such means as he has at his command, rather than risk the responsibility of adopting a course which might lead to consequences of a most disastrous character"

5891. That is from uncertainty as to the pressure?—No, he says cases in which it is almost certain that they have got the pressure.

5892. Is that direct carelessness upon the part of the fireman; he says "rather than risk the responsibility"?—Because although there may be sufficient water there may not be sufficient certainty.

5893. But although there is almost a certainty of the fireman's finding it, the fireman would not risk a case which might occur once in a hundred times of not finding it; but that would not occur under the constant pressure system, would it?—I have already reminded the Committee that constant pressure does not mean high pressure. Then, to show the Committee what kind of hydrant Captain Shaw requires, I have already told you that in Captain Shaw's report upon the superintending architect's pamphlet, so headed, he wants hydrants at every 100 feet apart. He says: "I am of opinion that London should be provided with a constant supply of water, at a height of not less than 300 feet above high-water mark; that this supply should be from a reservoir or set of reservoirs, and that it should be obtained by gravitation alone, and thus be altogether independent of the accidents and mishaps inseparable from pumping or any other process requiring the use of complicated and uncertain machinery; that the distribution should be distinct and separate for the two sides of every

Mr. F. J. Bramwell. 3 July 1876.

street; that is to say, that the pipes should be double, not single, and should be placed either in subways or under the footways, and not under carriage roads as at present; that the pipes should be connected at the ends of the streets by short junction pieces with sluice-cocks, which could be shut and opened at pleasure, in order to empty one side for repairs or to allow the whole of the water to run into either or both sides for fires or other emergencies, thus obviating the danger to which London is at present so frequently subjected whenever the water pipes are undergoing repairs; that the pipes should be laid at a depth of not less than four feet below the level of the ground, in order to avoid danger from frost; that at distances not exceeding 100 feet apart, there should be attached elbow pipes," those, of course, to be attached to the side pipes; therefore they would be at the half distance apart of this, "which should rise in the form of fixed stand-pipes or water-posts, to a height of four or five feet above the level of the ground."

5894. That was in 1866?—Yes, that was in 1866. And then the kind of hydrant which Captain Shaw exhibits here in this pamphlet would not be obtained for my 10 *l.* estimate.

5895. That was the one which was stated to cost 19 *l.*?—I do not know. It looks to me very likely, as far as one can judge from a picture.

5896. However, although that might have been the statement submitted to the Board by Captain Shaw, it is capable of being qualified or altered by experience, and it may be shown that a smaller number of points of supply, and therefore a smaller amount of cost, would be quite all that would be required?—I do not pretend to be a fireman. If I may use the term, I take for my text Captain Shaw's statement: "I want 2,000 gallons a minute within half-a-mile, and I want 150 gallons for each jet." Captain Shaw, as I understand, wants to bring 10 or 12 engines to bear upon a large fire, and he would equally want to bring 10 or 12 hydrants, if there was to be a substitution of the delivery by hydrants for that by fire-engines. I may say, in conclusion, that I am quite clear that any attempt to establish hydrants throughout the Metropolitan Board of Works district must be entirely useless, until the eight water companies are under some general regulations as regards pressure, and until the pipeage is re-arranged between the engineers of the companies and the engineer of the Board. Now, the re-arrangement of the pipeage would involve a heavy cost. It seems to me clear that the water companies cannot be asked to bear the whole of that cost, even if they can be asked to bear any of it. Their duty is to supply water for domestic purposes. Their pipes, I assume, are sufficient for that purpose; their pipes are not sufficient to make hydrants useful, and, as I have said, therefore a new arrangement of pipeage would be required; but whatever the cost of the pipeage, it must be added to the cost of the hydrants, or a proportion of it.

5897. Do I understand that remark to apply to the condition of the service pipes upon the mains, or to mains only, as separate from service pipes; that is to say, whether the mains throughout the town could be used for the application of hydrants to fire purposes as distinct from the service pipes, or whether you think they would be equally useless in that case?—I cannot tell you. I believe some of them could, and I believe very many of them could not, but I am quite sure there must be a settled plan of re-pipeage. I do not say that it must be universal, but it must be settled, because if put down piecemeal, I am sure that when the day comes that hydrants are to be put down as a whole, many of those which we should put down now would have to be cut out, and the whole of the money would be wasted. It is a very serious thing to put a hydrant into a main. If it is under 10 inches, you have to cut through the main and introduce a short piece bearing a branch upon its side; if it is above 10 inches, very possibly you may tap the branch on to the side; but those are very serious operations, and I think it is most undesirable to attempt to do that, when I am sure if the thing is to be done it should only be done by a system for the whole of the metropolis, having been well considered by the engineer of the Metropolitan Board of Works, and by the engineers of the water companies.

5898. Have you ever considered the question of the establishment of a separate system of pipe for the purposes of fires as distinguished from domestic supply?—I have had that before me; it was a proposition of the late Mr. Easton's. I am not sure that it would not be found to be the most satisfactory of all, but I would

would rather not express a definite opinion on the subject at the present moment. However, I am quite sure that that or some general revision of the pipeage must be carried out before any useful result can be attained. Then again, London is supplied entirely by pumping; if we are to have adequate pressure that means that water must be pumped to an extra height; every thousand gallons which you pump to an additional 100 feet will cost an additional third of a penny, or a halfpenny; that will put from 10 to 12½ per cent. upon the present expenses of the water companies in carrying on their business. I do not know whether they are to be called upon to bear that expense.

5899 I have referred to me the evidence given by the late Mr. Easton in 1862. The scheme he proposed was that certain reservoirs should be created?—That was a separate scheme altogether, but I am speaking now of taking the water from the present companies. My opinion is that if hydrants were put in here and there, as things are now, you would really do harm and would do so in two ways; in the first place, you would deceive by leading persons to imagine that there was an efficient protection, and when they came to turn the water on it would turn out that there was not; and in the second place, they would abstract water in feeble jets, which water, if suffered to issue upon the ground level, and taken into a steam fire engine, could be by that engine turned into powerful jets. Further, if the constant supply existed, it would not follow that you could do away with turncocks, because the only way of concentrating a supply of water upon any set of hydrants would be by sending the turncock to turn off the water from other districts, in order that those other districts might not rob the pipes from which you were drawing, therefore you would want to employ turncocks as you do now.

5900. At present I believe, as constant supplies are being given to districts, turncocks are being dispensed with?—I presume so; that is one of the advantages of constant supply.

5901. And I presume you would contend that where the supply was partially constant and partially intermittent, you could not do away with turncocks?—I will go further and say that even with the assistance of an entirely constant supply with the present pipeage, in order to get sufficient head to bring water to bear upon a fire, it would be necessary to shut off the water from some of the pipes.

5902. Practically that becomes more necessary as the companies are placing their mains under constant supply, which is not a constant high-pressure supply, because they will be removing their turncocks from this district, and you will be less able than you are at present to get a constant pressure of water?—Quite so; but at present, with the intermittent supply and cistern storage, as Captain Shaw has pointed out, suppose a fire to occur in a district where the water is shut off, when you turn the water on, the cisterns, having been exhausted of, perhaps, a third of their contents, and the first effort of the water is to fill those cisterns in preference to throwing a jet, and until those cisterns are filled up you cannot get the full benefit of the pressure; but if you had a constant supply then the cisterns would be gradually filled up as the water was drawn off, and in respect of that you would get a better pressure; but in respect of the absence of turncocks, who would be wanted to shut off the water from other districts, you would be worse off. I may say that I am having prepared, in a tabular form, a table of the pressure of the different water companies, which I will hand in for the Appendix.

5903. Will you procure for the Committee a table showing the different zones?—That shall be done.

5904. May we gather from what you have laid before the Committee that, in your opinion, not only is there not sufficient pressure in the pipes to enable hydrants to be of use during a fire, but that in many instances the pressure at present is so insufficient that in case any large fire broke out there is a great risk and danger to the town under the existing state of things?—No, I do not know that there is at all; not with the use of steam fire-engines.

5905. That is to say, that as long as the water will flow at all, the steam fire-engines can make use of it?—As long as the water will flow at all in any adequate quantity, the steam fire-engines can make use of it.

5906. But that you cannot supplement the use of fire-engines in any way in consequence of the uncertainty of the pressure?—In some districts you could not

Mr. *F. J. Bramwell.*

3 July 1876.

do it at all; in some others you could; and it might be useful were it not, upon the other hand, unwise to do a thing by detail which ought to be done as a whole.

5907. Upon that point, with reference to doing it by detail, might it not have been possible, during the years since 1866, as the mains were relaid, gradually to introduce a system of hydrants, and to do it in detail in that way?—It might have been, as regards the hydrants, but that does not tell me what sized pipes would be there to supply them. The thing which weighs so heavily upon my mind, and which I fear I have not conveyed to the Committee, is the enormous loss of pressure due to the delivery of a large quantity of water upon a particular spot, and that it is no use having in mind the head of water you obtained when the water is not being drawn off, and treating that as though that head would obtain when the water is being drawn off in large quantities; it is the pipeage which I am troubled about.

5908. And that to bring it into a condition of things upon which you could rely with safety, and under which you would reduce the cost of your present fire establishment, it would be necessary to alter the supply?—It would be necessary to have a meeting between the engineers of the Metropolitan Board of Works and the engineers of the water companies, and to have a thorough examination made into the arterial water supply, and where it was insufficient to vary it, and having done that to impose an obligation by statute upon each of those companies to keep a certain definite pressure above the pavement.

5909. Do you think that after that there might be a uniting together of the companies, so as to bring the whole supply of the different companies to bear upon a fire?—I think that it would be very desirable.

5910. Mr. *Ritchie.*] Do you consider that the expenditure which the City is about to incur is practically useless?—I have not said so. What I have told you is, that the City is incurring that expenditure, being supplied by the New River Company which gives the best pressure. I assume that they have taken care that there are proper mains, and if there are not, the City is so valuable that the property there can well afford to pay for them.

5911. But do you not think that the putting down of hydrants would pay in other parts of London where the pressure was sufficient and the property valuable, although they could not be put down over the whole of the rest of London?—What I have endeavoured to say is, that as there is no obligation except on two of the companies to give any pressure at all, and that one of them is wholly inadequate, and that the other would probably be inadequate, if there were any draught upon the pipes the Committee will be able to judge of that.

5912. I thought you stated that it would be useless to deal with the matter until a system had been settled for the whole of London?—Quite so.

5913. What I was asking you was, whether you do not think it would be advisable to put down hydrants in any districts in London where a constant high pressure could be ensured, and where there was also valuable property to protect?—Under those conditions I think it would be desirable, constant high pressure being ensured, meaning in my sense not high pressure when you are not drawing water, but high pressure when you are, which means, once more, the size of the pipes.

5914. But whatever the original pressure might be, might there not be the circumstance of water being drawn off in other directions, which would make it almost valueless at certain points?—I should say not, but if so, I would say at once that hydrants are useless, because whatever pressure there is you put something which renders that pressure nugatory.

5915. But I thought your evidence went to show that however high that pressure was originally, given certain circumstances of water being drawn off in this direction or that direction, and a certain quantity of hose, it might be almost reduced to a nullity?—I say it would be, until, instead of the pipes being made as they are now for domestic supply alone, they are made with a view to the extinguishment of fire.

5916. Do you know the pressure in Manchester and Liverpool?—Liverpool Kensington reservoir is 218 feet above Ordnance datum when they are not drawing off, and Manchester is zoned with power to communicate the pressure between the zones; they can get as much as 350 feet.

5917. Do

Mr. *F. J. Bramwell.*
3 July 1876.

5917. Do you know whether the pipes were laid down in Liverpool with the ultimate view of hydrants being placed upon them?—I cannot tell you.

5918. You spoke about the turncocks. I think you stated that they would be as much required when he had constant pressure as they are now?—Yes, when the pipes are so small that they are not adequate to all the demands upon them, and when, whether you have constant supply or intermittent supply, it would be necessary to shut off the water, except from the particular place where a fire was being supplied.

5919. That is with the view of getting more water than you would otherwise do if they were not shut off?—Yes.

5920. Do not you know that at present, under the present intermittent supply, when a turncock is not present they sometimes cannot get water at all?—No, I do not, because I undertake to say that in every instance the fireman can pull out the plug as readily as the turncock could do so.

5921. But when they pull out the plug may not they find that the water is shut off from that district?—Then they can turn the sluice cock supplying that district.

5922. But if they do not understand the sluice cock?—Any man can understand the sluice cock. You cannot get water for two reasons. One is, that the system being intermittent any particular pipe may not at the time of the fire be in use for the purpose of delivering water, and then the first effect is to fill up the cisterns; and the second is that until the cocks of other mains have been shut off you cannot get a full supply, and that is equally true of either system so long as you have small pipes and low pressure.

5923. I understand the evidence to go to this, that when the engine arrived and the plug was pulled out, no water could be got until the turncock came to open the main?—If you will use the word "shut off," I will agree with you in your understanding of the evidence. I cannot get water until they shut off the other plugs; the object is that you want to concentrate the water on a particular spot.

5924. You do not agree with what Captain Shaw says in his memorandum about the superintending architect: "In compliance with the above resolution," namely, "Captain Shaw to report to the committee as to the inconvenience at present sustained in finding water at fires, and what course he recommends for obviating the inconvenience." "I have to report that, on 13 occasions during the present year, inconvenience has been sustained in finding water at fires, owing, in every case, to the non-attendance of the regular turncocks, who alone understand the proper mode of working the existing water services with good effect. The course which I should recommend for obviating this inconvenience would be to discontinue the existing intermittent service, which is complicated and imperfect, and requires special men to work it, and to substitute for it a constant service, with a sufficient number of hydrants which could be opened by anyone, and would immediately deliver water without the delay of proceeding to a distance to open one sluice cock and shut a number of others, in order that the whole of the available supply might flow to the required locality"?—Which goes to the point I was making, which was, that you must shut off the others, and Captain Shaw says that that would obviate it; but he goes on to say what his requirements are, namely, 300 feet of pressure supplied from a reservoir, an obligation which does not exist in any one of the eight companies in London.

5925. Mr. *Forsyth.*] That would really be high pressure?—That would be high pressure. Captain Shaw is at the present moment a fireman, and he is asked what he would like, and he says what he would like; I should like 100,000 *l.*, but I have not got it. The question is not what you like, but what you can get in reason.

5926. I understand you to state that, even with the hydrants, unless there were constant high pressure, the turncocks would be required just as much as they are now?—I think it a self-evident proposition. If you are letting out at the bunghole, you cannot get a very good supply at the spigot.

5927. *Chairman.*] It rather follows upon that, that it is a larger question, because if a high pressure exists, then it comes to be a question of whether there ought not to be a separate high pressure for the purposes of fire, on

Mr. *F. J. Bramwell.* 3 July 1876.

account of that high pressure being too strong for domestic use?—If you will pardon my saying so, you are perfectly right; it is an enormous question, and that is why I say, although I do not like to express any definite opinion, that I have a very strong notion Mr. Easton's original proposition is well worthy investigation.

5928. Mr. *Onslow.*] May I ask you whether you consider this experiment, which you made in connection with Sir Joseph Bazalgette and Mr. Easton, at Grays, was conclusive?—As far as it went, with reference to the friction of the hose, certainly.

5929. Have you made any similar experiments?—On metallic pipes, I have, certainly; but, as I told the Committee, though I was very well up in the question of metallic pipes, I could only guess at the friction upon hose; therefore, I desired to fortify myself with regard to the question of hose.

5930. This was not an isolated experiment, I presume?—No, we were experimenting for three or four hours; I have no doubt about the results.

5931. I presume the water in London in the district of any company is never in a quiescent state night or day?—It is never I should think quite in a quiescent state.

5932. And therefore it is impossible to say how much water is drawn off at a particular point?—It is impossible for me to say. The engineers of the water companies might give the Committee some information upon the point, but I cannot.

5933. Then according to that, I suppose it is the fact that the amount of pressure above the pavement never meant that in the case of fire water could be thrown to the height regulated by the Act of Parliament?—If the water companies only gave their Act of Parliament pressure, that would be so, but I have no doubt you will find that in order to get customers in some districts they are giving, whether zoned or not, I do not know, a pressure more than they are compelled to give.

5934. Assuming 100,000 hydrants are required throughout London according to your statement, what distance apart would that give?—Speaking roughly, I should think from about 80 to 100 feet apart, but I must have information which I have not got, that is a full return of the length of the streets including courts, because we want hydrants up courts and gateways, and places of that kind. I think it is a very fair way to take it, by comparing the number of hydrants and the population of Manchester with the number of population of London and the hydrants required.

5935. Eighty feet apart would mean on each side of the road?—No, 80 feet measured in a direct line; they might be put 80 feet apart in a direct line, but I do not mean 40 feet in a direct line.

5936. Should you say in the whole, the houses in Manchester are as crowded as they are in London?—Without investigating the subject, I should think so; they have large factories in Manchester and we have very large warehouses. I should think it was much about the same: no doubt, returns exist showing the population per acre in both places.

5937. You are not yourself aware of the number of houses in Manchester?—I am not; I am aware of the number in London supplied by the water companies.

5938. Do you think it practicable for all the water companies so to arrange their mains throughout London, that by those mains a greater quantity of water could be at hand for the purpose of putting out fire; I lay a stress upon the word "practicable"?—By concert amongst themselves, yes, but individually, no; that is to say, it would be no use to turn into the water of one company giving 100 feet pressure the water from a company giving 40 feet of pressure, because instead of going to the fire the water from the 100 feet company would run into the mains of the 40 feet company; but I believe by a thorough combination between the water companies and the Metropolitan Board of Works, a very much better state of things might be brought about requiring legislation no doubt to make it work.

5939. At a very large expense?—Yes, at a very large expense for the outlay; and, I believe, a continuous expense afterwards for extra pumping.

5940. Sir *Henry Peek.*] The interests of the companies are so various that it would be necessary to legislate upon the subject?—I think so. I think what I have

I have shown you of their various conditions under their Acts proves that,

5941. Mr. *Clifton.*] You stated that, supposing there to be the constant supply system adopted, in the case of a fire occurring, the turncocks would still be necessary to turn the water off from other mains?—Yes; as long as the pipeage was insufficient and the pressure small.

5942. But I suppose that would be a very simple operation?—It would be the same as it is now.

5943. Do you think it would not be possible to train firemen to do that work, and so save the turncocks?—If you could do it then you can do it now.

5944. It is not possible now?—Then I say it would not be possible then. The operation would be the same, whether the supply is intermittent or whether it is not intermittent. It would involve the turncock going to the place and screwing the sluice valve down.

5945. In the case of constant supply it would not be necessary?—With adequate sized pipes it would not.

5946. In your estimate of the number of hydrants required for the metropolitan district, do you take the number of miles of streets, or do you take the roads, and so on?—I have taken it upon the population, without concerning myself with the streets.

5947. But you stated that hydrants would be placed at certain distances?—Then I answered the question without consideration. I make a rule-of-three sum of it. As the inhabitants of Manchester are to the number of hydrants in Manchester, so are the inhabitants of London to the hydrants required in London; and then I showed that if you take it by the acreage, those which the City are putting in about bear out that proportion.

5948. But it is obvious that there are some places in the D. District which are purely agricultural, and where the houses are about half-a-mile from each other?—That would be taking Greater London, with a much greater population.

5949. Sir *James Hogg.*] Is it not the fact that the pressure cannot be measured by the elevation of the ground alone, because it is also influenced by the length and size of the supply pipe, and the quantity of water flowing through it?—Certainly; that regulates the pressure at the moment of delivery, which is the time when we are interested in it.

5950. Could you, therefore, without such information about the supply pipes, determine from the contour map the position where hydrants could not be used so as to supersede the use of fire-engines?—No.

5951. Therefore, something further will be required than that contour map which has been handed in to the Committee?—The only thing the contour map will show is this: that when there is no water whatever being drawn off for any purpose whatever at any particular zone, the pressure would be 10 feet more or less than at another zone, but if the Committee, from that information alone, were to think they could determine where hydrants would be useful and where they would not be useful, they would be very much mistaken.

5952. The Temple have laid down their mains; did you hear the cost of those mains?—No, the matter was rather involved; the matter was being discussed, but I had not time to hear it.

5953. From their laying down those larger mains it shows that it would be necessary to have larger mains to make hydrants in any way useful in the metropolis?—Yes, I was called in to advise the Middlesex magistrates with regard to the water supply at Banstead in an asylum which they are building for 2,000 patients; they have their tank at the top of a tower from 80 to 90 feet high. I had 6-inch pipes put all round the asylum in order that hydrants might play with success. The justices were about to place 4-inch pipes, but I objected to that and had the specification altered so as to get a 6-inch pipe; I did that in order to get the requisite effective pressure, although the reservoir was a tank within the premises; that shows you my opinion of the necessity of large pipes.

5954. Mr. *Stewart Hardy.*] An honourable Member wishes me to ask you this question: To what height would a jet of water be thrown from a 12-inch pipe under a pressure of 60 lbs. at the end of one mile from a reservoir through the

Mr. *F. J. Bramwell.*

3 July 1876.

aperture of an ordinary plug; namely, 2½ inches diameter, assuming there to be no draught from the pipe at any other outlet?—I cannot answer that without calculating it.

5955. With regard to what Sir James Hogg has said about the Temple hydrants, and the laying down large mains there, I presume they have not laid a larger main than they have been able to get in connection with the one in Fleet-street?—I believe I told the Committee it was coupled up to the 12-inch main in Fleet-street, and also with the 7-inch main in Whitefriars.

5956. There would be no object in getting a larger main than the main it was joined to, would they?—Very little object. What I mean is this, that having pipes existing in the Temple they put another instead, and they put it 7 inches, which is far larger than required to supply the chambers of the Temple with water for domestic purposes, and they put in a pipe of that size in order that the hydrants might have an adequate supply of water.

5957. With regard to the water companies, as far as I understand you, what you complain of is not the companies neglecting their duties, but that the Act of Parliament does not impose sufficient pressure?—I made no complaint against the companies; I said, that to my mind their duty was to give a supply of water for domestic purposes, and they have done so; I have complained, and do complain, about not getting constant supply for domestic purposes, but that is not the question.

5958. As far as I understand what you have said at present, you consider that with the steam fire engines on the whole the water supply is efficient for the purpose of putting out fires?—I have not information enough upon that point; I was asked if I considered it was not, and I said I did not consider it was not; for anything I know it is; although I daresay there may have been instances in which it has not been sufficient.

5959. If you find that there are four instances only of a deficient supply of water out of 1,500 fires, do you think any system could be devised by any authority which would not have that proportion of failure?—As you put it so broadly as that, I think the system referred to by the honourable Chairman would give that result.

5960. With regard to Captain Shaw's demand for 2,000 gallons a minute; I suppose your attention has been drawn to the fire at Brookes' Wharf?—It has.

5961. There was no want of supply of water in that case?—I understand there was not.

5962. I am informed that Captain Shaw had there a larger supply of water than 2,000 gallons a minute upon the land side, and he had besides three steam fire engines upon the water?—If he had that supply it is extremely creditable to the New River Company.

5963. The question I want to found upon that is this: Does it not go to prove that even when Captain Shaw gets the fullest supply he demands, in the case of a really large fire, it is impossible to check the fire, and that all you can do is to preserve the adjacent property?—I am not a fireman, but I will say this, that whatever quantity of water he got running out at the street level to be pumped up by those engines he would have got less if it had come through the restricted aperture of a jet.

5964. Mr. *Young.*] These statutory obligations which the companies are under were imposed for the purposes of their trade, as giving a domestic supply, were they not?—Yes, they were sellers of water as other companies are sellers of gas.

5965. You stated that you thought it very likely that most of them have given a higher pressure than they were required to give, in order to supply their customers at a higher level?—I think it is quite clear that they must have done so.

5966. Do you know the Rockhill Station belonging to the Lambeth Board at Sydenham?—I do not know it.

5967. You know that has been established since 1845, when the obligation was put upon them?—But as far as I have understood, they have not imposed any obligation upon themselves except to supply their customers.

5968. Are they doing more than their obligation?—I suppose they are, for the purpose of earning money, and making a profit.

5969. You

5969. You say you object that you have not got a constant supply. Do you not know that many people who have good houses, and pretty things in their houses, object to it?—I do not know.

5970. You knew the late Sir William Tite?—I did.

5971. I have heard him say frequently that he would not have constant pressure on any consideration?—That may have been that the companies would require such obnoxious terms as they required before going before Lord Methuen's Commission, when they would not allow an overflow pipe to be put to a bath. I can only say that if a constant supply were to be given upon those obnoxious terms nobody would take it. The company proposed, as I say, in order that their water should not be wasted, that there should be no overflow pipe to a bath, so that if the servant forgot to turn the water off the owner should be gratified by the sight of a cascade down his staircase, damaging his walls and pictures. I can produce the proposed rule upon which the Metropolitan Board of Works called upon me to report, and my indignant remarks upon that very thing.

5972. At present that is not necessary?—No; we fought that too hard before Lord Methuen for that now to exist.

5973. Practically, you mean to say this, that what has been provided for one particular purpose will not answer for the other?—It may not do so; I think we shall find that in very many instances it will not do so.

5974. Mr. *Hayter.*] You stated that you knew the number of houses in London supplied by the water companies?—It is in Major Bolton's return. The number is 525,183, but I should say that that includes the district of the companies, which, I think, you will find is more extensive than the district of the Metropolitan Board of Works.

5975. Have you any approximate estimate of the expense of altering the fittings in the houses for a constant supply?—I know what it cost me, even in a modified form, and I have never got a supply; it cost me 16 *l.*

5976. It would be an enormous estimate to alter the fittings for the metropolis?—It is extremely onerous.

5977. Mr. *Hankey.*] It is not necessary to alter the fittings if you have a waste-pipe, is it?—You should read the regulations which were submitted before Lord Methuen's Committee, and the evidence, which is very curious. People came to say, "this cock costs 3 *s.* 6 *d.*, and that pipe costs so much a foot"; but pipes and cocks are not put about a house without bringing in the plasterer and painter, and so forth, besides the plumber. I took the opportunity, while I was having my house re-done up, to use the common expression, of having my place put in readiness for this new system, if it should be adopted.

5978. Mr. *Hardcastle.*] In your estimate of 16 *l.* you did not include any estimate for the expense of having the house specially prepared, but you took the opportunity of having it done when the house was being dismantled?—I did.

5979. I suppose your house is rather a large house?—No; I am sorry to say it is rather a small one. The Metropolitan Board of Works directed a known London surveyor to take the regulation of the waterworks companies in his hand, and go to houses of different rental values, from something like 30 *l.* to 600 *l.* per annum, and then say, as a surveyor having to do these things, what it would cost to do them in each class of house, leaving the house in the same decorative condition as he found it. His estimate would have brought out the whole of the alterations in the metropolis to over 3,000,000 *l.* upon the half a million of houses; it would have come to an average of 6 *l.* a house. That was the expense which was sought to be imposed on the public; the conditions have been altered, but the expense would be very heavy even now.

5980. In your opinion, would that be a necessary expense; or do you think it could be done more cheaply?—I think it could be done a great deal more cheaply. I think the way in which the constant supply has been re-introduced into Liverpool has been attended with very small expense indeed. I was called in to report upon the subject. Mr. Deacon, the engineer there, has invented a waste water meter, which tells you, by examination of the diagram attached to it, what amount of water was flowing away in the course of a night in a particular district. Now, unless that district is a place where water is being supplied to a manufactory, the presumption is that at night there ought to be

Mr. *F. J. Bramwell.*

3 July 1876.

no flowing away of water. If they see water flowing away, it is taken to be going to waste. Now, when that is ascertained, the meters are carefully watched. Every house in the district of each meter which indicates waste is visited; the pipes are stethoscoped by the turncock, and he can tell to the greatest nicety when a very small quantity of water is flowing through the pipe. There are external cocks to all the houses, and when water is heard to flow through any of them those cocks are shut off. There may be 100 houses under the control of a single meter, and when only 10 of those had been turned off, you would go back to the waste-water meter, and perhaps find that the delivery, instead of being 3,000 gallons an hour, has dropped down to about 30 gallons; then you know that in one or more out of those 10 houses there is something to complain of. Then the next day you make your inspection at the 10 houses, and in almost every case you have something to complain of, and the inhabitants cannot object to your having come in. Whatever is out of order is put right, and the result is that a constant supply is given, with comparatively little waste. I have here a copy of the "Liverpool Mercury," containing the fortnightly meeting of the committee, and you will find that, through the whole of Liverpool now under constant supply, excluding the quantity supplied by meter, that constant supply is given at 20½ gallons per head per diem, whereas you find, upon the intermittent service of previous years as much as 24 and 25 gallons was being used, and I believe that under such a system as that the constant supply could be given to London without the enormous expense at which the supply is being given now.

5981. Sir *James Hogg.*] Would that require the whole of London to be divided into districts, as Liverpool is?—No, it would require one of those meters upon every group of houses which is now supplied on the intermittent system.

5982. *Chairman.*] Have they adopted the system of gauging the quantity supplied to each house by meter?—No, they have not, but they have adopted the opportunity of supplying the various districts in groups, and that being calculated by the number of houses gives the result.

5983. Mr. *Hardcastle.*] When this cock is turned off in consequence of the turnkey discovering a waste of water, does it remain turned off all night?—Yes.

5984. That is hardly a constant supply?—I do not think a man ought to have the water when he is wasting it.

5985. Is the water shut off from the whole 100 houses?—No, each house is supplied with a stop-cock, and when you put in the key and turn it a little you can hear the water distinctly. I know the result is this, that after visiting a number of houses, say 100 houses, and turning off a few of the cocks, when you come back to your tell-tale you will find you have stopped your leakage.

5986. Mr. *Ritchie.*] That is to say, if you happen to be fortunate enough to drop upon those houses?—You visit the various houses under that meter, and where you find a noise you stop the water.

5987. Mr. *Forsyth.*] With regard to the cost of the hydrants in the Temple, it seems that the cost of laying new mains in the Temple, and making connection with the existing services, exclusive of taking up and re-laying the pipes, was 1,428 *l.*?—Yes.

5988. *Chairman.*] Does that show how much main you had to lay down?—It does not, but the acreage, including the garden, is about 10 acres.

5989. Mr. *Forsyth.*] But the garden is a large portion of that area?—The garden, and the portion in front of King's Bench Walk, would occupy about 4½ acres.

5990. The cost of fitting the hydrants, exclusive of the new leather hose, was 317 *l.*?—Yes; the internal hydrants only.

5991. That included the internal hydrants?—Yes.

5992. It cost the Temple upwards of 1,700 *l.* to make the changes, including the internal hydrants?—Yes; supposing the 1,428 *l.* includes the external hydrants, which I am not able to say.

5993. The height of the buildings in the Temple is upwards of 50 feet, is it not?—I should think that Harcourt Buildings must be more than that measured from the ground.

5994. You

Mr. *F. J. Bramwell.*

3 July 1876.

5994. You tried the engines and the hose in Hare-court, did you not?—Yes.

5995. The water went completely above the top of the buildings, did it not?—The water went on to the parapet of the house.

5996. Did you see the water go over the roof of the church?—No; I was told it would do so, but I did not see it.

5997. I want to ask you this: laying aside altogether the question of the cost, and supposing you could get a system of hydrants without high pressure to begin with, throughout London, would you think that a good substitute for steam fire engines?—No.

5998. Then supposing you could get high pressure?—May I import the condition of adequate pipeage?

5999. Assuming you have adequate pipeage, and hydrants, and high pressure, and constant supply for the purpose of putting out fires, would you prefer that to the system of steam fire engines?—I have said that I am not a fireman, but my opinion, as far as it is worth anything, is that I should prefer it, because you then appear to get a result which would be equal to that which would be given by an engine, and you get it with things which are upon the spot.

6000. I am, of course, assuming in my question that no steam engine was used at all, or in fact existed at all, but that you would rely entirely upon hydrants for dealing with fires?—I do not at the present moment see, under those circumstances, what would be the danger of doing away with the steam engines. I do not see, on the other hand, why there should not be a few, but I am not a fireman. In my judgment, if you have constant high pressure, sufficient pipeage, and sufficient hydrants, that would be adequate.

6001. You know that in Manchester and Liverpool hydrants are used?—There are a few engines in each town, but the bulk of the work is done by hydrants.

6002. First of all, in order to rely upon hydrants so as to do away with the necessity of using steam engines, it would be necessary to incur a cost for London of at least 100,000 hydrants at 10 *l.* a piece, which would cost a million of money?—Yes.

6003. Then besides that, to get high pressure you must get extra pumping?—Yes.

6004. And that would be, as you said just now, a burden upon the resources of the water companies of from 10 to 12 per cent.?—I took it for an extra 100 feet. I said if you had to give an extra 100 feet, it would cost that extra. It must be remembered that every drop of those 120,000,000 gallons a day that we get in London is pumped.

6005. Supposing the companies were not called upon to give that extra supply at their own expense, it would have to fall upon the Metropolitan Board of Works, supposing they still continue to have the care of the fire brigade in addition to the 1,000,000 *l.* which the hydrants would cost?—Yes.

6006. Besides that, would there not be a re-adjustment of the pipeage?—Yes.

6007. To what extent would that be necessary?—To what extent I do not know, but to a large extent I am certain; and that there is another item which I have left out, and that is the alteration of the pumping engines.

6008. You mean those belonging to the water companies?—Yes, if you had those engines to pump against a head of 200 feet, and you call upon them to pump against a head of 300, you will have to alter them very materially.

6009. Sir *Henry Peek.*] You think the total cost would be altogether out of proportion to the advantage to be gained?—That I do not know. That is a question of political economy to which I am unable to give an answer, not having considered the question from that point of view.

Mr. *Edward Easton*, called in; and Examined.

Mr. *E. Easton.*

6010. *Chairman.*] You have, I believe, gone into this question of pressure?—I have. I may say that as regards the question of the statutory pressures which are to be given by the different water companies, I have gone into that with Mr. Bramwell, and the evidence which he gave upon that point I am prepared to support.

Mr. *E. Easton.*

3 July 1876.

6011. You indorse the statement which Mr. Bramwell has made with regard to these statutory pressures of the different water companies?—Yes; according to their Acts. I should also say with regard to the experiments we made together with Sir Joseph Bazalgette upon the friction of the hose and the jets, that I indorse that also.

6012. From your opinion, are you prepared to indorse what Mr. Bramwell has placed before the Committee, that, taking the friction of the different pipes into account, and the length of the pipes, the general pressure which would be obtained if hydrants were placed upon the mains would not be adequate to make them efficient without the use of engines?—Certainly not, generally speaking: there are exceptions to that rule, which you have already had placed before you, namely, the Temple and the City. The City is now very well supplied with water for fire, as well as for other purposes, and there are other isolated places like the Temple where they can throw a jet without the aid of fire engines, I believe, on to the roof of any building within the Temple.

6013. But that has been attained within the Temple, I understand, by their going to the expense of laying down a fresh main for fire purposes?—They have laid down a main for fire purposes much larger than they would have found necessary for their domestic supply; and the City authorities also, under the New River Company, have increased their mains, and spent a considerable sum of money in putting down larger branches in order to produce the same result; but what I say is, that looking at the pressures which are available practically in London, I agree with Sir Joseph Bazalgette, in his recommendation to the Metropolitan Board of Works, that it would not be wise for them to go to such a large expense as the placing of hydrants all over London would entail, with the very small result which was likely to be attained.

6014. Have you considered the matter from the other point of view, whether in such districts as have been mentioned to the Committee, similarly situated to the Temple, such, for instance, as Woolwich and Deptford, and other districts where hydrants have been shown to be available, it would not be advantageous to place them there?—I think not, and for this reason, that the fire brigade people who are now available for the whole of London, that is to say, the firemen from one district can be drawn by Captain Shaw into a totally different district, would be confused by not knowing exactly what they had to expect, and the effect of that would be that they would not be able to make the full use of those hydrants which were put down in any particular district.

6015. Do not you think that hydrants put down in those districts where they could be made effective for fire purposes, would supplement and assist the engines very much in those districts?—I think not.

6016. Not even by bringing a supply of water to bear upon the fire before the engines could be upon the spot?—I believe it can already be done by the plug pipes, and is frequently done; that they drive into the plug a stand-pipe, and screw on the hose to it, and as far as the pressure goes at the present time, they can bring it to bear upon a fire, and I do not think that, taking the whole of the metropolis, the Metropolitan Board of Works would have done wisely in spending so much money for the sake of the advantages they would gain.

6017. I wished to ask you, apart from the question of expense, what your opinion was of the utility of placing hydrants for fire purposes, as against continuing the present condemned plugs?—In a great many places where pressures are low the hydrants would really be worse than the plugs; the plugs will let out more water at the surface than the hydrants would. At some places, no doubt, it would be worth while to place hydrants, as the City are doing, when they can insure the prospect of a good pressure and an adequate supply of water.

6018. Would you represent that the City portion of the New River Company's district is the only part of the New River Company's district where those conditions apply?—I am not aware whether that is so, or not; I expect that the City, from its being of small size, and from the small length of main which is necessary to supply it, it being less than three quarters of a mile from north to south, has a better chance of getting a good pressure than any other part of the district.

6019. What

6019. What appears upon first sight is, that if a small portion of the New River Company's district is capable of being made more useful than other districts for fire purposes, there may be other parts of the district under the same conditions?—There may be other parts, but I am not aware whether there are or not.

6020. Assuming that to be so, the utility might be the same in those parts? Except for the reasons which I stated before, that a different state of things would be brought to bear, and that the firemen would be expecting to have sufficient pressure to be able to put out a fire without the use of an engine, and when they went to the district they might find it was not so; so it would be practically useless.

6021. We may gather from what you say, that in your opinion, in the present condition of things, it would neither be wise from the point of finance, nor would it be wise from the increased facilities you would obtain, to apply hydrants?—Not generally.

6022. Have you considered what condition of things ought to be brought about in order to give greater security for the protection of the town from fire?—The most effective way of supplying water, in case of fire, would be to be able to put it on to the fire without the aid of an engine, no doubt.

6023. In the same way that they are generally able to use it in Manchester?—Manchester and Liverpool, and at Brighton. I am engineer for the Brighton Corporation, in respect of waterworks. I was the engineer to the company before the corporation acquired the waterworks, and I should like to describe the state of things at Brighton. We have four zones, or levels at Brighton; the lowest service is 150 feet above the sea; the next, or middle service, is 220 feet above the sea; the next 290 feet, and we have one, the highest service of all, 430 feet above the sea. The water is supplied constantly all over the town.

6024. From reservoirs?—Yes, all those zones have reservoirs; there are reservoirs upon the three lower zones at each side of the town; that is to say, upon the race hill side of the two valleys there are three reservoirs, the lower service, the middle service, and the higher service. Upon the Cliftonville side of Brighton we have three other reservoirs exactly at the same levels, low service, high service, and middle; those are connected together by mains. The hydrants which we use are of the screw-down kind.

6025. The same as the Manchester hydrant?—No, they are more like the Liverpool hydrant, or more like those in the Temple. We never use the fire-engine there; there has not been a fire-engine used in Brighton for 17 or 18 years. The fire arrangements, I may say, are in the hands of the police.

6026. Will you tell me whether the supply of water for the purpose of fire is identical with the supply of water for domestic purposes for the houses, or whether it is separate?—It is the same supply; the hydrants are upon the mains, and the same mains are used in the different streets for the domestic supply of the inhabitants. Now the fire service being in the hands of the police there is also for the assistance of the police a fire brigade; that is to say, one superintendent and two or three men who are specially skilled in the use of the hose, and in the use of the axes and other apparatus which are used for the purpose of putting out fires, and preventing the spread of fires. At the chief police stations in Brighton hose reels and fire escapes are kept; the hose reels have always 300 feet of hose or thereabouts coupled up ready to take to a fire. If a fire takes place an alarm is given to the nearest police station, and one policeman who is always there, or two or three who are always ready run out with the hose reel and take it to the fire, and another man is sent to fetch the chief of the fire brigade. Within five minutes generally the hose is attached to the hydrant, and by the time the superintendent comes he is able to throw a jet of any required pressure on to the fire, and I need not say that a fire is very soon put out unless it gets to a very great head. The turncocks, of whom we have five, have nothing to do with the matter at all although the practice is that when a fire takes place the man in charge of the district turns on the next highest pressure. I may say that we have the means of joining all those zones which are one below the other, and if it is likely to be a bad fire the man in charge turns on the higher pressure, but that the firemen have nothing to do

Mr. *E. Easton.*
3 July 1876.

with, and know nothing about. I consider an arrangement such as I have just described is as near perfection as it can be, and I believe it is very nearly the same as that which obtains at Manchester and Liverpool. The whole of the water is pumped into these reservoirs and is used from the mains in the way I have stated.

6027. Have you considered whether it would be possible to apply any similar system to the state of things existing in the metropolis?—No doubt it would be possible to do it, but I see very great difficulties where eight companies are supplying different pressures. It could be only done by joint action, such as has been described by Mr. Bramwell, and then only after very considerable outlay for mains, and fire service mains, in every district of the metropolis.

6028. At the time you established the Brighton fire service, were the mains fresh laid?—Most of them.

6029. What size are the mains generally?—They vary from 18 inches to 10 inches. Our largest mains are 18 inches

6030. I understood you to state that the service-pipes for domestic supply were joined on to the same mains as the fire supply?—Yes; they are in respect of one-third of the whole number of inhabitants. I have said before that we have both constant supply and intermittent supply going on in Brighton. Originally the service was intermittent, and the company got an Act of Parliament to purchase the old works. Then the corporation compelled us to put on constant supply, and we found it impossible to do so with the old fittings at a moment's notice, and we had no power to make regulations such as those which the metropolitan water companies have, and therefore acting under my father's advice a second set of mains was laid down all over Brighton, so that we can give an intermittent service as well as a constant service. As regards the one third of the inhabitants upon the constant system, they are directly connected all over the town with this high pressure fire service, but as regards the intermittent service they may or may not be connected according to the district.

6031. But with regard to those who are connected; had you to re-arrange the fittings in all the houses in order to give them the high pressure?—Yes.

6032. And that has all been done?—That has all been done.

6033. Can you give the Committee what the cost of the alteration was per house?—No, I cannot. I did not know that I should be asked the question, and I am not prepared to answer it. I could very likely inform the Committee at a later stage of the inquiry what the cost was.

6034. What happens in those districts where the intermittent service exists in the case of a fire breaking out. Can you bring the constant high-pressure system to bear upon those districts?—The constant high-pressure system is everywhere.

6035. You had to put down a new set of pipes in the town?—Yes, one house may have constant supply, and the next door intermittent supply.

6036. That comes very much to what your father suggested in 1861 with regard to the metropolis; that is to say, the establishment of a separate new service to be laid of pipes to be applied entirely to the extinguishing of fire?—It is not exactly that; it is more like the combined system, such as Manchester and Liverpool have, but the same effect would be produced by laying down a separate fire service, without a doubt.

6037. But what I meant was that you found you could not practically use the existing services, but that a fresh supply, whether for combined purposes or single purposes, must be laid down?—Yes.

6038. You adopted one which would give a supply to houses as well as to fires?—Yes.

6039. That entailed an expenditure for fittings in the houses which you did serve with constant supply?—Yes, and it entailed also the laying down of a second set of mains all over the town, along with the intermittent service.

6040. That comes very much to what Mr. Easton stated; that it would be necessary to lay down an entirely new system for the purpose of extinguishing fires?—Yes, I believe if you wished to give the same supply in London as they can do in Liverpool and Manchester, and that we can do in Brighton, that is to say, a constant supply on high pressure, sufficient to do without a fire-engine, that plan of my father's would probably be found to be the cheapest way of going about it.

6041. That

6041. That was a plan under which he suggested that certain reservoirs, one of which was to be on Primrose-hill, were to be established, the water companies having consented to supply water, and under which new mains were to be laid, for the purpose of fire, throughout the town, and re-arranging the hose system on that plan?—Yes, making the fire service entirely distinct from the water companies, except with regard to providing the water.

6042. Can you give the Committee the cost of the new system of laying down pipes which you established at Brighton?—The cost of the intermittent pipes, that is to say, the second set of pipes we laid down, was not considerable. They were simply for the intermittent service, and came off the constant supply mains; consequently they were not large pipes; they went from the mains along each street, and were only three inches diameter. They cost between 20,000 *l.* and 30,000 *l.* altogether.

6043. In Brighton you say you have laid down a new system of mains and pipes which spreads all over the town, available for fire purposes. Can you give the Committee what the cost of laying down those high pressure pipes was as distinguished from your intermittent supply pipes, which, I understand, was a separate system?—The second set of pipes are simply service pipes joined to the constant supply mains. The mains are the same all over the town. Those are under constant supply. Then we laid down a pipe to enable us to give an intermittent supply in different streets, and at the end of every house-pipe there is a stop-cock.

6044. As I understood from you when you took over the existing water supply and its works, the local authority compelled you, after the Act was passed, to give them constant service, and it was then found that, with the existing pipes which were there, and which were on the intermittent system, you could not give the constant supply, and that a new system was then laid down of mains spreading over the town, in which you have now constant supply at high pressure?—That was not what I meant to say. What I meant to say was, that we should have had to alter all the fittings in the houses, and we had no power to do that, and therefore it was put upon us that we were obliged to provide an intermittent supply for those who would take it intermittently, and in order to do that we were obliged to lay down another set of service mains all over the town. The mains are the same for both purposes; it is just as if we had a main along Fleet-street, and took branches right and left up all the streets and alleys, with a cock on the end of every one of the pipes which they used for the intermittent service.

6045. When there is a necessity for using that water for fire purposes, have you to shut off your intermittent supply?—No, we never do that.

6046. You do not find the constant draught upon your main overpower your pressure?—We do not find it so, and I account for that by the smallness of the pipes for the constant supply. They cannot get the water so fast as to produce an effect on our larger mains.

6047. Do none of your intermittent pipes exceed three inches in diameter?—I do not think any of them do.

6048. That is drawing from a main of what size?—It varies from 8 to 18 inches.

6049. You think that it would be possible for the Metropolitan Board of Works, supposing their finances enabled them to do it, to apply such a system as you have at Brighton to London, adopting the suggestion of reservoirs to be established in the places suggested by the late Mr. Easton?—I think that, irrespective of the cost, certainly a quite efficient system could be established for London.

6050. And that would be provided even with the existing company's water supply of the town?—Leaving them as they are, I think that there would be wanted a certain number of steam fire engines to be used with the new system of reservoirs, because there are buildings which could not be commanded by any reasonable jet.

6051. That is to say, just as in Manchester and Liverpool a certain number of central points where a steam engine could be placed, would be necessary?—Yes.

6052. But you might do away with a large part of the existing brigade and its cost so far as plant was concerned, if you got this supply?—I believe so, but

Mr. *E. Easton.*

3 July 1876.

I have not gone into that question with the view of giving evidence upon it before this Committtee.

6053. You have not at all considered the evidence which was given before the Committee of 1862 with a view of testing the question?—I have not gone into the question fully enough to give any opinion upon it now.

6054. I believe the cost of that scheme was stated, including everything, applying hydrants according to the system which I sketched out, and laying the mains, and so on, to amount to about 3,000,000 *l.*?—I believe that was what my father put it at.

6055. And that the cost after the first outlay was completed, under the brigade, which was to be established under it would amount to 40,000 *l.* a year?—I believe that to be about the estimate that was made.

6056. I think the fire brigade is managed at Manchester and Liverpool by the police, or by a fire-brigade system attached to the police?—I believe so; that is how it is done at Brighton.

6057. Have you formed any opinion with regard to the advantages of a system of that sort?—I think there are very great advantages in having the police working with the fire brigade in any town. The way in which they manage at Brighton is this: One of the superintendents of the fire brigade every Monday morning when a certain number of men come off duty takes them down to some place or other in the town, and exercises them for an hour in the use of the hose, the screwing on of the hydrants, and so forth, and the police by that means get to have a very accurate knowledge of where every fire-plug is and how to manipulate it, and also there is a list printed and given to every police constable which shows where every hydrant is all over Brighton (*handing a copy to the Committee*), with short directions to the police constable at the police station as to what he is to do in the case of an outbreak of fire.

6058. Therefore, practically, the whole of your police are, to a certain extent, useful in case a fire breaks out?—They all are.

6059. Then I suppose the advantage of the police working with any brigade like the fire brigade is, that the policeman, being always on the spot, would probably be the first person aware of a fire?—Certainly.

6060. If he can be used as a fireman until your engine comes, and can apply the constant service you have got by means of the hose, he would often be able to check a fire materially before the brigade arrived, would he not?—No doubt the police would be able in the metropolis to check small fires, and prevent large ones altogether if they arrived in time.

6061. But you believe that the effect of using the police to assist in the application, under the constant system, of water to fires, would materially diminish the nature of fires in London?—I think so. Of course, for a large portion of the work some firemen are necessary, on account of the inability of the police to use the implements of the firemen, so that there would be some firemen still necessary, but the police would undoubtedly be of great service.

6062. Therefore, as you do at Brighton instruct a certain portion of your force, say those men who are placed at certain stand-points throughout the town, we might instruct those men practically as firemen, and by giving them the appliances they would be, although not quite as useful, yet very useful in the early stages of a fire?—They would be always useful in the early stages of a fire, if they could screw the hose on at all, which of course every policeman in the force is able to do at Brighton. That makes a very considerable difference to the superintendent or the fire brigade when it arrives.

6063. Then it come to this, that if we are to bring about this greater security, in your opinion a constant service under high service is first of all necessary?—Yes, it must be given.

6064. And that a system should be brought into existence which would enable you to use your police force, either jointly with, or as your fire brigade, for the purpose of working your system?—I think that that is a very desirable condition to arrive at.

6065. There is an incidental question with regard to the hose which I wish to ask you. You mentioned that your hose was carried upon a reel at Brighton; what description of hose is it?—Leather hose.

6066. At Manchester I believe they use the flaxen hose, which is considerably lighter,

lighter, is it not?—We very often use flaxen hose, but generally inside buildings.

6067. The advantage of the flaxen hose being that a single man can carry the hose of a certain length, whereas he could not carry the same length of a leather hose?—But the reels are so arranged that one man can run off the whole quantity; it is on a carriage, and it is arranged so that it winds off the reel, so that it is immaterial whether it is leather or canvass or indiarubber, because one man can run off with the whole 300 feet and all the appliances.

6068. That would imply, at your points of call, if you were to make use of your policemen, having a very large place in order to house your reel, would it not?—Not a very large place; the reel and hose could be run into a very small room; a room eight feet square would hold a very considerable quantity of hose.

6069. What compass would a flaxen hose of 50 feet go into?—Fifty feet of 2½-inch hose would go into a very small compass; I think those I saw in the Temple were not more than 15 inches in diameter; practically, they could be packed into a sort of pillar-box.

6070. Where leather hose could not?—I do not think it could. I do not think it would be wise to attempt to put the hose in a pillar-box; they ought to be upon a reel, because in half a minute you can lay 300 feet of hose off the reel.

6071. All the system, however good it may be, depends upon the first condition of having constant high pressure throughout?—Certainly, a constant pressure service at sufficiently high pressure.

6072. And when that sufficiently high pressure has been attained you would then have to apply hydrants to it in order to make it useful for the purpose?—Yes, certainly.

6073. I do not think you stated to the Committee what the cost of the hydrants at Brighton had been?—The cost at Brighton, including the branch and making good the road, is about 5 *l.* upon the average.

6074. Does that include the stand-post?—No, simply the hydrant and the box. I may say that I think every engineer who has had experience in waterworks would endeavour to place the hydrant inside the curb of the pavement. At Manchester (and that accounts for the small cost that is spoken to) they put the hydrants direct on to the main. I have a very strong objection to that.

6075. The cost both in Liverpool and Manchester seems to have been so much under anything that has been placed before the Committee as likely to be the cost of hydrants here, that it is hardly sufficiently explained by that circumstance. I think at Manchester the cost is put at 2 *l.* 15 *s.*, covering the excavating, jointing, fixing, hydrants, and the top-box, and re-laying the pavement; and then the report states that where the hydrants are laid upon a new main the cost is reduced by 1 *l.* 4 *s.* 4 *d.*, leaving only 1 *l.* 15 *s.* for the cost of them in those cases?—The reason is, that in Manchester the hydrants are fixed upon the top of the main; the branch turns upwards, and the hydrant is fixed directly over it. That is a system which could not be adopted in London. I think the only way you could do it in London would be, and I think what the water companies would have a right to insist upon is, to put a branch upon the main, lay down, a 3-inch or 4-inch pipe, according to the pressure which you have at the inside of the curb, and there fix the hydrant. The advantage is obvious that you can always find the hydrant; it never gets covered up by dirt or gravel, and the risk of injuring the main by the heavy traffic in London is done away with. In Liverpool there is a branch, and the hydrant is placed on one side, and that makes the Liverpool hydrant cost 6 *l.* odd. In a country town the ordinary cost is 4 *l.*, including the short branch and the hydrant, but in London the cost of paving alone would be very often double that money. I have gone very closely into that. I have an estimate here of the cost that will be incurred by placing a hydrant upon, we will say, a 10-inch main, situated 24 feet from the curb, and I have made an estimate for it when it is being laid in ordinary paving, in asphalte, and in ordinary wood paving, and those prices have been obtained from the contractors who do this work very largely, Messrs. Mowlem.

6076. Is that at the time when you were placing a new main?—No; it is considering

Mr. *E. Easton.*

3 July 1876.

sidering that you would have to break open the existing pavement and put down a hydrant, and remake the pavement.

6077. What are the prices you have there?—I have taken it as being a 24-feet branch. The cost of the paving alone, supposing it were asphalte, and the making good of the footway and the curb would make it come for 24 feet to 5 *l.*, without anything else, and the wood pavement would cost about 2 *l.* 10 *s.* for that length of pipe and the hydrant; ordinary pavement and pitching would cost between 15 *s.* and 1 *l* for making good the pavement itself, and the curb and the little piece of pavement inside the curb.

6078. That would be a cost in addition to the cost of your hydrant?—Yes; and that has nothing to do with the excavation; this is simply remaking the pavement.

6079. Have you the total cost?—I have.

6080. Will you first give the items separately, and then the total cost?—The cutting of the main and fixing a branch upon a 10-inch main would cost 3 *l.* 8 *s.*; the cost of laying 24 feet of 4-inch pipe, including digging, jointing, and everything else, in London would be 2 *l.* 8 *s.* I have taken the hydrant as being the same as that put in the Temple.

6081. Is that what they call the sluice-hydrant?—No, it is not the sluice-hydrant; it screws down a valve; it is more like Hawksley's hydrant; it is the same as they have at Liverpool; they cost 3 *l.* 2 *s.* 6 *d.* each fixed; the boxes cost 16 *s.*, and the brickwork costs 4 *s.* 9 *d.* each, making 4 *l.* 3 *s.* 3 *d.*

6082. What was the total cost in that instance of the whole of the operation with the excavating, the cost of the hydrant and branch, and the making good of the pavement?—The cost of the hydrant, the branch, the pipe, the digging and fixing, comes to 9 *l.* 19 *s.* 6 *d.* Then the cost of the pavement will vary according to material; in asphalte it will cost 4 *l.* 18 *s.*; in wood it will cost about 2 *l.* 18 *s.*, and in paving about 1 *l.*; that is supposing not that each hydrant was done piecemeal, but that you were setting to work to do a street like Oxford-street, so that it would be doing it under the most favourable circumstances after the pavement has been laid down.

6083. Then the cost would come, under the most reasonable conditions, to over 10 *l.* per hydrant?—I believe it would for such a street as this. Then in the outlying portions of London, which would be more nearly analogous to what you would find in a country town, the cost would be about 5 *l.*

6084. That would be similar to what the cost has been in Liverpool generally?—Exactly; and even in Liverpool or Manchester, if hydrants were put inside the curb, the cost would be between 5*l.* and 6 *l.* I may say that in the City of London, and in some of the parts just outside the City, the cost is very much greater, because in the City the work has to be done very expeditiously (the traffic cannot be interrupted), and the whole of the expenses are very much greater, there being a greater number of men employed, watchmen, and so forth.

6085. Are you aware that the estimate which was recommended for the City was not very much in excess of the 10 *l.* per hydrant?—For the hydrant alone it is about 8 *l.* for fixing and putting down, without the branch or the connection with the main. I understand that is what has been recommended.

6086. Then you would represent to the Committee that they ought not to conclude from the fact that the fixing of these hydrants has been done for the amount, say, for instance, with regard to Brighton, of 6 *l.*, and in Mancheester even more cheaply than that, that you could expect the same results in London?—Certainly not. From the conditions in London, I am quite sure the cost will be very much greater. In the City, I have no doubt the hydrants will, including the branch and the connecting pipe, cost 20 *l.* a-piece. I have estimated the cost of the hydrant and fixing to be 10 *l.*, in addition to the pipes which are already laid down, and those pipes were laid when the streets were paved, and therefore there is no cost for their paving taken into account.

6087. Is there any other point which you wish to place before the Committee?—I think not.

6088. Mr. *Ritchie.*] You stated I think that one of the first conditions before being able to utilise the police would be a constant high-pressure system throughout London?—I do.

6089. But could not there be a small hand pump under existing circumstances kept

kept at the police stations to be used before the arrival of the engine?—I do not think it would be of much service.

6090. You are aware that hand pumps are used now in cases of small fires?—We have at Brighton some little things of that sort. They are chiefly used for putting out fires in chimneys.

6091. But still those hand pumps may be more or less powerful. If one of those pumps were kept at the station and were brought to bear immediately on the first outbreak of a fire, do not you think they might in some cases be extremely useful before the arrival of the engine?—Yes.

6092. So that even without high pressure, you can quite conceive some kind of instrument being kept at the police station which could be brought to bear immediately upon a fire while a message was being sent for the regular engine to come up?—Yes, if the police could also be put in the way of knowing exactly how to fix one on to the main or plug in order to make use of it, then it would be useful; but unless they were educated in the same way as we are educating our police at Brighton, it would not be of any service.

6093. That is always assuming of course that the police have some kind of instruction which Captain Shaw proposes to give them under these circumstances?—Quite so.

6094. Mr. *Onslow.*] I understood you to state that the only training the Brighton police get for putting out fires is this half hour every now and then?—This hour every Monday morning.

6095. Then as regards what I may call the athletic portion of putting out a fire, the Brighton police have no experience whatever?—As a matter of fact, the superintendent of the fire brigade directs the jet, and does that portion of the work, and acts as a fireman.

6096. As you are aware, in many fires there is a good deal of climbing to be done; there may be cases in which a man may have, in order to save life, to go up and down a ladder several times, carrying an exhausted person on his back; have the Brighton police any training in that respect?—The Brighton police work the fire escapes, and so they have experience in saving life in the case of a fire, but, as I said before, it would always be, in my opinion, necessary to have an organised fire brigade of very considerable size, in order to properly provide against fires in London.

6097. Therefore, practically to sum up as regards the training, the only practical training the Brighton police have, is the screwing on of the hose to the mains?—And in putting up the fire escape.

6098. That is, putting it up against a house?—They go up and take out anybody who may be in the fire.

6099. Could you say how many fires there are at Brighton in the course of the year?—No, I could not. There are not many fires in Brighton, as a matter of fact.

6100. Your fire escapes are kept in the police stations?—The fire escapes are kept near the police station.

6101. Could you say whether there has been any fire in Brighton where there has been any damage to the extent of 10,000*l.* of late?—No, I think not. There was a fire at a music hall, which was a large place, but I do not think there would be damage to the extent of 10,000*l.* done.

6102. Are you aware of any cases in which there has been damage to the extent of 5,000*l.*?—In that case, and in the burning out of one or two private houses, certainly damage to that extent, would have taken place, but not to the extent of 10,000*l.* I cannot answer the question more particularly than that.

6103. The experience of the Brighton police in putting out large fires is, at present, exceedingly limited?—It is practically nil. What you call a large London fire, we have no experience of in Brighton at all. We could not have.

6104. Therefore it is impossible for you to say that the Brighton system would answer the purpose in the case of an extensive fire in London?—I cannot say that it would, and I should say, simply confining it to the police, that it certainly could not answer; as I have said, you always must have an efficient fire brigade.

6105. You have only one or two men?—We have, because there are so few large fires.

Mr. *E. Easton.*

3 July 1876.

6106. Therefore if there were a large fire in Brighton, and only one or two experienced men, your brigade would, in all probability, break down?—I think not.

6107. Under no circumstances would your system break down in Brighton?—I do not think so.

6108. Do you give the police any extra pay for their fire-brigade services?—I am not aware, but I think not.

6109. It is part of their duty which they undertake when they enter the force?—It is part of their duty.

6110. Do you know the pay of the Brighton policeman?—No, I do not; I can easily get all that information if the Committee desire it.

6111. I want to compare their pay with the pay of the London police?—I am not aware of it.

6112. Have you ever tried how many hoses you can put upon one particular hydrant, or make them bear on a fire?—In most places in Brighton we can put four; in some places six, and even more; we have had six hoses playing upon a fire.

6113. What is the average pressure at Brighton given for a continual supply over the whole of the town?—That varies according to the zones; as I explained, we have four zones at Brighton, varying from 150 feet above the sea to 430 feet, and we have the means of turning each one of those pressures from one to the other; we can put the highest on to the lowest, or each on to the others; the average pressure is about 220 feet.

6114. I suppose you would say that Brighton was a very easy town to give a constant supply to?—I do not think it is more easy than any other town.

6115. Not easier than London?—I do not see that it is easier.

6116. Where you have those different heights which you have at Brighton, it would be easier to give a constant supply, would it not?—I think the different levels of London are just about the same; they vary very much in the same way from near the level of the sea to 400 feet; even if it is a question of the reservoirs, then I do not think, looking at the size of Brighton and the size of London, that there is any very great difference; if you go as far in proportion in London as you do at Brighton, you would get an equally good service reservoir.

6117. *Chairman.*] You think there are the same facilities for establishing a reservoir for that pressure in London as there are in Brighton?—Yes, I believe so, certainly; such a service reservoir as my father spoke of; I believe there would be no difficulty in finding a reservoir in London which would give the same pressure as we have in Brighton.

6118. Mr. *Onslow.*] This 5 *l.* which it costs you in Brighton we may take as exclusive?—Yes, we have no pitched paving in Brighton; it is all Macadam road; that is the cost of everything.

6119. Do you find that those 5 *l.* hydrants thoroughly answer the purpose?—Those are the hydrants which we use.

6120. Are you aware whether the police ever have had any experience in Brighton of saving life from fire since the foundation of this institution?—I believe they have, but I cannot say from actual knowledge.

6121. For how many years has this system been in operation?—Seventeen or 18 years.

6122. Sir *Henry Peek.*] What is the population of Brighton?—The population supplied by the waterworks when it is full of visitors is 160,000; that includes Preston, Cliftonville, and the Brunswick-square district.

6123. How many police are there there?—There are three separate bodies; the population which the corporation has charge over is about 60,000, and they have 153 policemen.

6124. What is the population of the district served by your water supply?—When the visitors are there about 150,000 to 160,000.

6125. And to keep that area in order how many police have you?—I cannot say. I only know of the 153 belonging to the corporation of Brighton, which is a totally different body from the bodies which have control over the other districts which we supply with water. Brighton proper has about 60,000 inhabitants, or 80,000 when the visitors are there.

6126. Is that a larger per-centage or a less per-centage than the police bear to the population in London?—I cannot say.

6127. I think

6127. I think you stated that the police are all, with the exception of one or two, the firemen of Brighton?—They are.

6128. Supposing the Pavilion were on fire with a good brisk wind blowing, how many of these police do you think would be required there?—I cannot answer that question, but they would all be available.

6129. What would become of all their ordinary duties while they were putting out the fire?—I expect that their ordinary duties would cease in Brighton for a short time.

6130. Would Brighton be given up to the roughs for the time?—I say that I think that would be the effect of a tremendous fire; but when I say they would all be available, of course they would not all be allowed to go. A certain proportion of the 153 would be left to keep order.

6131. I think you stated that in Brighton there were no manufactories and no large buildings, with the exception of a few music-halls?—There are also the large hotels, such as the Grand Hotel and the Norfolk Hotel.

6132. But there are no large works?—There are the railway works, and a few other works, but no manufactories.

6133. If I understand you aright, your district of water is not the same district as that which is managed by the corporation?—No, the corporation of Brighton is in rather a singular position with regard to that. They have bought the powers of the water company, and the water company supplied the three parishes of Brighton, Hove, and Preston; whereas Hove and part of Preston are not under the control of the corporation in respect of municipal matters, so that the corporation of Brighton are the water company only over those two districts. The corporation went for a Bill this year to unite all three, but they lost it; so that, at present, there are the corporation of Brighton, the West Brunswick Commissioners, and the corporation, if you chose so to call them, or the Commissioners, of Hove, but all those three are included in the Parliamentary water district of Brighton.

6134. Who takes care of the interests of the people living outside of the limits of the corporation?—Each of those bodies; the Hove Commissioners and the Brunswick Commissioners respectively take care of their own district's affairs, and look after fires in the same way by the police; but I am not their engineer. I am only the engineer of the corporation of Brighton, and I have only the means of getting information with regard to them which I have given you with regard to the corporation of Brighton.

6135. Sir *James Hogg*.] You have stated that you have at Brighton 153 police?—Yes.

6136. How many are on duty at one time?—I do not know.

6137. So that you could not say how many would be available to keep order in case of a large fire, and how many to attend the fire?—I could not give you any information upon that point.

6138. Have you any idea of what sort of drill the police undergo?—I have not; I did not come prepared to give evidence upon that point.

6139. You represented that the police in Brighton were virtually doing the duty of a fire brigade; cannot you tell me how much drill a policeman gets to make him useful as a fire-escape man?—I cannot.

6140. Do you take large or small men for the police?—I cannot tell you.

6141. Do you know how long it takes a fire-escape man to be of service in London?—I do not know.

6142. Are they practised in taking people up and down the ladders?—I do not know that; I am not prepared to say anything upon that head.

6143. So that you could not compare the fire brigade, as worked by the police, in any way with the manner in which it is worked in London?—I have already stated that, until the whole system of water arrangement in London is altered, it would be impossible to think of putting it into the hands of the police; and I went so far as to say that I did not think it would be worth while to give them any apparatus with regard to the putting out of fire in London.

6144. Then your evidence goes to show that they might be made useful simply as accessories to the fire brigade?—Simply as accessories to the fire brigade; but the whole question must be looked at from a general point of view. I did not wish to lead the Committee to understand that I thought the police of London could ever be effectively used to any very great extent.

Mr. *E. Easton.*

3 July 1876.

6145. Is there a constant supply at Preston, Hove, and Cliftonville as well as at Brighton?—Yes.

6146. Therefore all those parts are put under the corporation for the purpose of constant supply?—Yes.

6147. So that you have a constant supply and an intermittent supply as well?—Yes.

6148. Does not a little inconvenience arise from having one house under the constant supply and the next under the intermittent supply; there is great multiplication of pipes and expense, is there not?—No, there is only the multiplication of the second set of service pipes in the streets. There is another line of pipes in the streets which is commanded by a cock; whether it is intermittent or constant supply, the same pipe goes into the service.

6149. Take Palmyra-square, for example. Supposing No. 1 is under the constant supply; No. 2 under the intermittent supply; No. 3 under the constant supply; and No. 4 under the intermittent supply; you would be obliged to have a different set of pipes running from them, would you not?—No, it makes no difference to the waterworks whether it is intermittent supply or constant supply; the pipe goes into the house, and we know nothing more about it. The convenience of having a second pipe was, that we were called upon to give constant service suddenly, and we gave it in that way. As long as we got the mains we left the people deriving an intermittent supply alone, altering the fittings for those who required the constant service.

6150. You were asked some questions about establishing a second system with regard to water supply which would cost three millions of money, or which was estimated at three millions in 1862; do you not think that it would cost a great deal more now?—I have no doubt that it would, because London is larger than it was: but I have not gone into that question.

6151. You stated that reservoirs might be placed in different places in London, as they are in Brighton, but have you thought whether there is any place in London where they could be placed?—No, I have not; but I know that many of the water companies at present have these reservoirs.

6152. You have not gone into the details of those questions?—I have not.

6153. When you were talking about the hose in Brighton, you spoke of six hose being brought to bear on one fire; could you tell the Committee how high they were able to throw water?—We can throw jets of 70 or 80 feet high, but as a rule 50 feet would be about the height.

6154. Mr. *Stewart Hardy.*] With regard to constant supply, you state that you have no power to enforce fittings upon the occupier, but it seems to be a matter of fact that you do not supply them with constant service unless they put their fittings in proper order?—We have a set of regulations which have to be complied with.

6155. You have no power to enforce those regulations, I think you stated?—Yes, we have power; it was only to gain time that the second set of service mains were laid down.

6156. You said that the thing could not be done in London; are you aware as a matter of fact that the thing could be done from the present set of service pipes in London, with the exception that in London you supply the whole district from one set of mains, whereas from your pipes you can supply alternate houses from two sets?—Constant service with your regulations can no doubt be given in London.

6157. With our single set of pipes, if we give constant service at all, it must be given to a whole district at once?—No doubt.

6158. With regard to Birmingham, Manchester, and Liverpool, you state that they having hydrants are enabled to do without engines. Are you aware that in Liverpool the proportion of engines to the population is precisely the same as it is in London under the present system?—I was not aware of that.

6159. That in Manchester the proportion of engines to the population is as two to three as compared to what it is in London?—I am not aware of that.

6160. So that there is no very large saving of engines if that is the case?—If that is the case, certainly, but I am not so conversant with Manchester and Liverpool as with Brighton, and there we have no engines at all.

6161. But

6161. But in the case of Brighton, with the side of a steep hill, you are in an especially favourable position for giving a good pressure, are you not?—I do not think so.

6162. Surely, owing to the high hills, you are in an exceptionally favourable position as regards pressure?—Our top reservoir is not higher than Highgate Hill or Hampstead, or only 20 feet higher, and the ground slopes from there to the river.

6163. But the Highgate Reservoir would have to supply an enormous district, whereas you have a high hill the whole length of the town on which you could supply any number of reservoirs you thought proper?—But we have two great valleys where we dip down nearly to the level of the sea.

6164. But the hills and valleys round London bear no comparison with the hills and valleys round Brighton?—I do not think that that has anything to do with the matter.

Thursday, 6th July 1876.

MEMBERS PRESENT:

Mr. Clifton.	Sir James Hogg.
Mr. Forsyth.	Sir Andrew Lusk.
Mr. Hankey.	Mr. M'Lagan.
Mr. John Stewart Hardy.	Mr. Onslow.
Mr. Hardcastle.	Sir Henry Peek.
Mr. Hayter.	Mr. Ritchie.

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

Mr. *George Shaw*, called in; and Examined.

Mr. *G. Shaw.*
6 July 1876.

6165. *Chairman.*] I BELIEVE you are one of the committee appointed to consider the question of the protection from fire of the City of London?—It was at my instance that the question was brought before the Court in 1872. It was upon a resolution which I submitted to the Court that the matter was referred to the committee; and I have been upwards of three years chairman of the committee. At present I am not the chairman, having retired in April last from the chair.

6166. The committee was appointed in 1872, was it not?—I submitted the resolution in 1872.

6167. What were the instructions to the committee?—It is called the Gas and Water Committee. The instruction was to inquire, "If any improvement can be suggested in the water supply to the City of London in case of fire, either by fixing hydrants in certain of the public ways, or by other method, with power to confer with the directors of the New River Company and the Commissioners of Sewers on the subject."

6168. What action has your committee taken with regard to that?—It was a matter which occupied a considerable time, and the result of those inquiries was a report, with the preparation of which I had a good deal to do, and which I submitted to the Court on the 4th July 1874.

6169. Was that report presented in July 1874?—In 1874; I have the report with me.

6170. That report I believe was arrived at after going into the whole question, and after communication with the water company which supplies the City?—After considering the matter with great care, and having conferences with the water company which supplies the City, the New River Company, in fact.

6171. What were the principal recommendations contained in that report?—The recommendations were that we should ask power to fix branch pipes from the constantly-charged mains, and upon those pipes fix hydrants. It is given in this report at considerable length. We found upon inquiry that the New River Company had in the City 78 miles of pipe, and that about 25 miles of those pipes were constantly under pressure.

6172. Those were mains, I suppose?—Those were the mains that I speak of.

6173. What was the size of the service pipes from the mains which you recommended should be placed under the system of hydrants?—The size varied from six inches to four inches; four inches would do very well unless a considerable distance had to be traversed.

6174. Had your committee gone into the question from an engineering point of view, with reference to whether hydrants placed upon service pipes of that size

size would be sufficient for your purpose?—Yes; I may tell you that the object we had in view was that there should be in case of a fire an immediate obtainment of water. There had been complaints made, and Captain Shaw had mentioned in some of his reports that in some instances when they pulled the plug out there was really no water in the pipes, and our object was to prevent any such occurrence in the City. Our object, and I may say especially my own, was, that wherever a hydrant existed, when they turned it on, there should be a supply of water.

6175. Had you in your communication with the New River Company ascertained that the pressure supplied by that company would be sufficient to give you a pressure at your hydrants placed upon those service pipes equal to what you required for extinguishing fires?—Precisely. We had that point ascertained; a series of questions was put to the engineer by the committee, and in answer to one of those, on page 14 of the addenda, you will see at No. 13, "What are the heights of the company's other high service reservoirs"? The answer to that is: "The heights above Trinity high water of the company's high reservoirs not directly employed in the service of the City are respectively 220 feet, 348 feet, 420 feet, and 433 feet. The pressure which is due to any of these heights might be thrown at once upon the City, but for the damage which might be thereby caused to house pipes," &c. The ordinary high pressure in the City I may say is 126 feet 6 inches above Trinity high-water mark.

6176. Is that the ordinary sustained pressure?—That is the ordinary sustained pressure which I had tested on several occasions, which I will refer to presently.

6177. Have you ascertained that that sustained pressure is maintained when water is being drawn off for the domestic supply?—I have. I may say that I had collected a good deal of information on these points, because I thought possibly an objection would be taken to the report that we had to bring up in April last, which I produce here, and as I had had to fight the question on several occasions I thought that it would be better to be armed with as much information as I could obtain.

6178. Would you place before the Committee how you arrived at those facts?—I wrote to the architect of Christ's Hospital; it is the highest point within the City where the hospital stands; and he wrote me this letter, dated the 26th April, but I thought I should prefer seeing it myself; the letter in fact confirms all that I saw. We had the water turned on without any communication with the company whatever.

6179. At what time was the water turned on; was it when the domestic supply was being given?—Yes, it was about eleven o'clock in the day at the time when the greatest demand, I should imagine, would be made upon the services of the company. I have had considerable experience in the matter. When we attached the hose in the playground the pressure from the hydrant placed upon the ground threw the water, it might be, 65 or 66 feet, but, at all events, above 60 feet. It marked that upon the face of the hospital. Then, another thing I tested was this: they have up the staircases, or turrets, if I may so term them, of the hall, pipes carried up, and upon each landing there is a hydrant, and there is one, it might be, within 10 feet of the roof. I had a hose attached to that hydrant, and carried it along the roof, which is, I should think, over 70 feet from the ground, and the ejectment was perhaps eight or 10 feet from the hose, not upright, but so that it might be applied at any place point blank.

6180. So that it was a delivery of water about eight or 10 feet from the nozzle?—Yes.

6181. Did you take the length of the hose which you carried along the roof?—No; I should think it was, perhaps, about 30 or 40 feet. It was brought upstairs, part of the way, through a door leading on to the roof, and another length attached to it by one of the men there, and I tried it for a short time.

6182. But for the purpose of inquiry, it becomes a very important point to know what was the length of the hose which you attached to the hydrant, because it has been represented to us that every foot of hose diminishes the force of your water; and therefore if it was a hose of considerable length which was attached to that pipe of 70 feet in height, and it still gave you a delivery of eight or 10 feet, that would represent a very high pressure?—I should think there must have been from 40 to 60 feet of hose. It was over 30 feet, at all events,

Mr. *G. Shaw.*

6 July 1876.

because I had to bring it partly upstairs and across the lead flats and over the ridge, for the purpose of testing it.

6183. Was that test applied at the same time as the previous experiment; that is to say, at the time when the general water supply was going on throughout the town?—Yes; I had finished the one and I then went to the other. It was within half an hour of the first test.

6184. That test was applied, as I understand, at a time when the companies were not informed of it. It was an accidental test, taken to satisfy yourself; is that so?—Quite so; in fact, the architect told me that the height was 12 feet. I do not think it was quite 12 feet; but he stated in his letter that he had tried it before at another time, and the force at the top of the hall towers, that is, after the water had risen 60 feet in the pipes, gave a distance of 20 feet, and that was after it had been carried up another 10 feet; but I did not find it so much as that, therefore I only give it as I saw it myself.

6185. That was the actual delivery force at the end of the nozzle; it did not merely flow out after the water had risen that 60 feet?—Quite so.

6186. Was that a column of water, or merely where the spray reached?—A column of water; in fact, the force was not sufficient to give spray. In throwing water into the air to any great height no doubt it breaks into spray; but this was not so; it was really a body of water.

6187. And that you say is with an ordinary pressure of 126 feet above Trinity high-water mark?—That was what was stated in answer to our inquiries here. It is in answer to Question No. 11: "What is the height of the reservoirs which supplies the City? *A.* The reservoir from which the City is supplied has an elevation above Trinity high-water mark of 126·5 feet."

6188. With that pressure the results you have described were arrived at?—Just so; and I also had it tried in another place. Of course, taking such interest as I had done in this inquiry, I had many communications sent to me from people who were desirous of having my opinion about hydrants, and I was asked to go and see the hydrants in Warwick-square, which is on the opposite side of Newgate-street, in the same way.

6189. Before we go to that, I should like to ask you with regard to the City experiments; did you try more than one hose in your experiments at Christ's Hospital?—Yes, we tried more than one.

6190. Did you apply more than one hose to the hydrants, so as to increase the draught from the pipes; that is to say, did you put a greater strain upon the pipes than one column of water?—No, not at one time.

6191. You did not try the pipe so as to ascertain the pressure there would be in that case?—No, I did not.

6192. Is there only one hydrant at Christ's Hospital?—I think there are eight or 10.

6193. The object of my question was this: Captain Shaw has stated in his evidence that, for his requirements, it would be necessary that the supply given should meet the application of several hoses at the same time?—No doubt, but I have tried it with two or three at the Temple. I should say that I wrote also to Mr. Cates with reference to this special report, knowing nothing of my being called here at all; but I tried them there three or four at a time, and the fact is that the jets all rose to the same height.

6194. Was that the same experiment that Mr. Bramwell has reported on?—No, it was not.

6195. Who is Mr. Cates?—The Temple surveyor. I had written to him early in April asking for his opinion, and he kindly made an appointment that I might see the hydrants there tested myself, and here is what I wrote at the time: "Inner Temple, 13 May.—I had a hose connected to the hydrant in Tanfield-court, and turned the water on, first with one jet and again with two jets. The water rose as high with two jets as when one only was used, going clear over the parapet on to the roof of the library, a height of 60 feet from the pavement. So great was the flood of water that we had, within a comparatively short time, to turn it off at the stop-cock to prevent an overflow, the rain-water pipe not being sufficient to carry it off the roof. To test how long a time it would take to fit hose and branch-pipes to a hydrant, an order was given to go to Fig Tree-court. To wheel the whole along the court and down the passages, two tiers of steps, a place very difficult of access, where no fire-brigade engine could approach, occupied something under three minutes. Here we also tried first

first one, two, and three jets. In each case, as in Tanfield-court, there was a full jet, high over the cornice of the buildings in Crown Office-row, thrown on to the roof, a perfect flood of water. The whole thing was carried out by a bricklayer and a labourer employed in the Temple in the ordinary way, without any trouble at all."

6196. You were perfectly satisfied that, as far as those hydrants were concerned, they were efficient to extinguish a fire without the use of an engine?—They were sufficient to throw water. My view is not altogether in favour of doing away with the engines of the fire brigade. The object of having hydrants is that we should have water at the breaking out of a fire to prevent its getting further.

6197. You would supplement the use of your engine by those appliances, which would come into operation before engines could come into play?—Quite so. My experience teaches me the great value of that. I can give you an instance in point. Last year a very serious fire broke out in Bunhill-row; it was very late at night, and there happened fortunately to be in an adjoining house (I forget the name) three hydrants placed in the warehouses, and they succeeded in keeping the fire within bounds for 20 minutes, as they assured me, before the engines arrived. In fact, when I called, having heard this, and saw the people, they said they thought the insurance companies could very well have afforded them something for what they had saved in the fire. I was told that the hose attached to a hydrant in the Artillery Ground was taken across to this building in Bunhill-row, the distance of, I should think, 300 yards, and it was of great use then.

6198. They still had an output of water from it?—Yes, it kept the fire confined within certain limits.

6199. And there was still a supply of water notwithstanding the length of hose?—Yes; I do not know that it would be very much. I am only telling you what they have assured me, namely, that they had assisted in keeping this fire within comparatively narrow limits.

6200. What you state that for is to show that with a system of hydrants applied to the constant supply, as existing now within the City, you could practically bring water to bear upon a fire long before any engine arrived?—That is just what my whole object, and the whole object of our committee has been; and I may say that the first feeling which arose in the City upon this matter was a kind of terror which overtook some persons in the City about the time that the fire took place in Chicago, which was followed by that at Boston. It was then supposed that we had not a sufficient quantity of water. I had read Captain Shaw's reports, and finding that the whole amount used by him throughout the metropolis from these fire mains was something under or about 8,000,000 gallons, I thought it was a needless alarm; besides, I have myself in my own business fixed a considerable number of hydrants in the banks connected with the main of the New River Company, which throw quite to the top, say, of Barclay's Bank and several others, so that I knew there was water there if we could bring it to the hydrants.

6201. You were about to say that you had made some experiments in Warwick-square also; have you any considerable number of hydrants in Warwick square?—No; there is one hydrant there for the purpose, I believe, of simply cleansing the street, or street watering, but I applied the hose there, and the water rose to the same height as it did at Christ's Hospital adjoining.

6202. Would Warwick-square be under the same pressure as Christ's Hospital is under?—It is just opposite; it is between Paternoster-row and Newgate-street.

6203. With regard to your experiments in the Temple, I suppose you were aware that the authorities in the Temple had laid down additional piping; that is to say, they had placed a large pipe in connection with the main in order to supply their hydrants?—They have simply carried out what I have recommended should be carried out throughout the City.

6204. Are you aware of the size of the pipe?—I believe it is six inches; I do not think it is more.

6205. Your recommendation implied a 6-inch and a 4-inch pipe; do you think a 4-inch pipe would be equally effective?—It depends upon the distance from the main pipe. For instance, there is a main pipe running here; if we had, for the purpose of fixing the hydrant, to carry that some considerable dis-

Mr. *G. Shaw.*

6 July 1876.

tance it would be better to have a larger pipe because of the less friction in the delivery of the water.

6206. There is no question under the pressure at present supplied by the New River Company, of the necessity of your altering the fittings in the houses, is there?—That is another thing.

6207. I have no wish to go into that matter, because the Committee have not it before them, but I wish to know whether you have considered the desirability of a separate supply for fire purposes as separate from the supply for domestic uses?—Yes; but the whole object of this reference was that we might have the advantage of a constant supply by having those hydrants connected with the main without touching the present intermittent system for domestic purposes.

6208. Therefore your recommendation really implies a separate system, as you have sketched out, for the purposes of the fire brigade?—Yes; that is of connecting pipes with the constantly charged mains. I may say that there has been a scheme of a most enormously expensive character submitted, but I say that with this at the expense of the City of something like 20,000 *l.*, we shall be put in a position equal to having the streets supplied with a distinct supply.

6209. Does that recommendation contemplate the laying of all these pipes at once, or the laying of them by degrees, and placing hydrants upon them by degrees as your streets are repaired?—That is one of the most important considerations. It was recommended that it should be done at once, or that a district should be done at once, but I strongly recommended that we should take advantage of the streets being repaired by the Commissioners of Sewers, because a large item consists of the paving. I may tell you that the paving when it is simply granite costs 1 *s.* 10 *d.* a yard, but when it is asphalte it costs us 16 *s.*; therefore as we are going on asphalting the streets in the City as fast as we can, it was to take advantage of those streets being opened, thereby saving one-half of the expense; that is contained in another report which I submitted to the Court in 1875.

6210. Was the calculation in your report of 1874 of 20,000 *l.*, which it was placed at in the rough, made upon the idea that you were going to place the whole system under this new water supply at once, or that you were going to do it by degrees?—That we were going to do it by degrees.

6211. Mr. *Onslow.*] How do you mean that one-half of the expense would be saved?—I say that if we had to open the streets for the purpose of these connections, and did not avail ourselves of the opportunity of the streets being repaved, it would add nearly one-half to the expense.

6212. *Chairman.*] And that, therefore, you would save yourself by availing yourself of the opportunities which the Commissioners of Sewers give you in repairing the streets of the City from time to time?—Yes.

6213. Did you go into a calculation with reference to the time it would take you, under those circumstances, to bring the whole of the City under this supply?—Yes, that was a thing that I considered and went over with the chairman of the Commissioners of Sewers. They have a certain number of streets which they repave every year. We thought, perhaps, it might take six or seven years.

6214. Sir *Henry Peek.*] Are you an engineer?—My business is that of contractor and builder, but principally in plumbers' work, in pipes, and so on. I have had experience of over 30 years of the matter in the City, so I know something of it.

6215. I gather that you say that the lowest price would be 20,000 *l.*?—Yes, with the full reduction, as gained in the way I have mentioned. May I further say that, amongst other information which I have received, I wrote to the surveyor of the Bank of England. I knew they had been doing a good deal there, and he wrote to tell me (accompanying his letter with a plan) what had been done. He says: "During the past year a considerable addition has been made to the system of water supply in case of fire, so that every portion of the Bank, both on the ground level and on the roof, is now under perfect control, as the accompanying plan will show you. There are 33 fire-cocks on the New River main in the roof, and 59 on the pipes in staircases and ground level, making 92 in all, from which a good supply, with great pressure, can be obtained by opening the sluice-cocks at different points surrounding the Bank, keys for which are kept by us near every cock, so that in an emergency we can, if needed, flood the Bank." This was the plan (*producing the same*). Of course I had tested

tested all these as well, but I have this letter for the purpose of putting it before the Court (*handing a copy of the plan to the Committee*). That shows that they have complete power in the matter.

6216. *Chairman.*] Do you state that you have made yourself acquainted with the hydrants placed in the Bank also?—Quite so; I have been over them all.

6217. You have ascertained that the pressure there is equal to giving a similar jet to that which you have described?—At least, and the same at Barclay's bank. I send up to those places once a month to test all of them, and I have them put in action and tested all over the place.

6218. Does your test last for any time?—Sometimes a test may last for three-quarters of an hour.

6219. From those experiments which you have made, and from the investigations and inquiries which you have instituted, it is your opinion, and the opinion of your committee, that a system of hydrants, supplied even to a pressure such as we have now from the New River Company, is quite sufficient to be an immense addition to your protection against fire?—I believe it to be a very great acquisition and protection.

6220. Now I wish to ask you one or two questions about the cost, and the way in which you went into that question. I suppose you investigated the whole history of the different kinds of hydrants and the expense of putting them down?—The hydrant we propose for the City is a better thing than anything else that is in existence, it is a different thing from what is in the Temple, although that is a very good one.

6221. Is that a hydrant which you contemplate, both for the purpose of extinguishing fire and washing your streets?—It is rather strange that to-day I was summoned to attend a committee upon which the question was simply that. "It is to consider and select some hydrants for trial;" but, of course, being here, I cannot be there. I may say we have sent a specification out, and we have had 16 different plans and drawings of hydrants submitted to us. The question is now under our consideration, and I have no doubt that the one that we select will be better than that which has been as yet in use. We desire to have it 3 inches full; that at the Temple is $2\frac{1}{2}$ inches, and the difference between $2\frac{1}{2}$ inches and 3 inches makes a great difference in the pressure of the water.

6222. What I wished to ask you was this: the Committee have had placed before them statements with reference to the system which is applied at Manchester and Liverpool, and other towns, and the hydrants that are in use there; we have also had evidence placed before us that those hydrants practically would not be such as could be recommended for use in the metropolis, and that it would be necessary to go to a very much larger expense, not only for the hydrant, but for substituting hydrants for the present system, than was at all contemplated or carried out in those towns; now, I understand that the City have gone into the question, and that they represent that a certain number of hydrants would be required in their district which they contemplate being able to put down at about something like 10 *l.* a piece. The different kinds of hydrants which have been submitted to us vary from 5 *l.* up to 19 *l.*; what I wanted to know from you was whether, in considering the subject, you had gone into it so carefully as to be able to say that you could put hydrants down for 10 *l.* a piece?—I still think we shall be able to put down hydrants for 10 *l.* a piece.

6223. Would that be hydrants with the posts, the uprights, or merely the box on the pipe?—I have an estimate of that; but as we have slightly altered it, and as we are merely considering the matter, perhaps I had better not say at present anything definite, but I still believe that our original estimate will cover the cost.

6224. You do not at all concur with the evidence which was given before this Committee at our last meeting, that your probable cost will be nearer 20 *l.* than 10 *l.*?—No, I do not agree with it at all; and a good deal else besides.

6225. Does your 10 *l.* contemplate merely the expense of placing a hydrant upon the pipe, or does it contemplate taking from the supply pipe a pipe to the side of the street?—No, not quite all that. That, of course, would vary with the distance.

6226. But that would be an additional expense to the 10 *l.*, that you cal-

Mr. *G. Shaw.*

6 July 1876.

culated as the cost of each hydrant?—Yes; but that is included in the 20,000 *l.* to carry it all out.

6227. The 20,000 *l.* was calculated, was it not, upon taking advantage of the streets being repaved, and not having to replace the pavements?—Quite so. The Court has authorised about 5,000 *l.* now, so that we have now about one-fourth of the amount in hand, and we are now moving in the matter.

6228. You are about to carry out the application of this system to a certain number of streets which are mentioned in your April Report?—Yes, but last year we carried out the branches. We carry out the branches, and fix them in places where we can fix hydrants. There are about 100 of them done, and there will be about another 100 done this year, where we are repaving the streets; but once those branches are laid on to the kerb we can fix hydrants without further trouble without touching the streets at all.

6229. The City therefore have quite satisfied themselves that it is possible to get additional security against fire by the application of hydrants in the way you have described?—Very much so. As I said before, our great object is that wherever there is a fire, and wherever there is a hydrant, there they will obtain water by turning it on without waiting for the engines at all.

6230. That is to say, that your policemen may be entrusted with hose at fixed points which they could use prior to the arrival of the fire brigade?—That is our intention; and to have hose placed, say, in every parish, or in some place where it could be easily enough got at, so that the policeman at once screws on the hose and applies it wherever it is required.

6231. Have you in contemplation to connect those places where your policeman obtained his hose by a telegraphic communication with the fire brigade stations?—We have not come to that. I have had a great deal of private correspondence with people who take an interest in the matter, but we have not discussed it in committee yet.

6232. I suppose you would agree that it would be necessary that the fire brigade should be informed of the event as quickly as possible, so as to supplement the work you would be doing with the hose?—Yes.

6233. You state that you propose to place the hose in such a position that a policeman on his beat can avail himself of it in case of fire; have you any fixed points where you could place this hose?—The matter is not sufficiently matured to enable me to say when that would be; no doubt we should have, but I thought it best to get the consent of the Court for one thing, and let the other follow. I did not wish to entangle the matter too much.

6234. In fact, as the whole question depended upon the supply of hydrants, that was the first point to be attained?—Quite so; I had quite enough to do to get that.

6235. Is there any point which you would like to submit to the Committee which I have not touched upon?—I do not know that there is; I simply say that I hope, in the event of any scheme being submitted by this Committee, that seeing that the City has taken action in this matter, we should be left to carry out our own system without being interfered with. We are doing it all, and I do not see why what we are doing in the City should not be done throughout the metropolis. I might further say that when, about two years ago, we had this question before us, there had been several hydrants fixed, I think in the Kent Waterworks district, near Deptford. I went down there with my committee to see them tested, and we had, perhaps, about a dozen different kinds of hydrants which were attached to very long lengths of hose, and the water rose, I cannot say the height, but I should say between 40 and 50 feet, and I was told at the time that there would be no difficulty in doing what we have done and are doing in the City.

6236. At that time, when you tested the hydrants of the Kent Water Company, did you make yourself acquainted with the pressure that they gave generally through their district?—Not scientifically. I saw that the water rose higher than the houses there; the water was flung over the ordinary character of houses there.

6237. Was there a pressure quite sufficient to do what you expect to do with the pressure that the New River Company gives you in the City?—It was sufficient for the character of the houses in the neighbourhood at that time.

Mr. *G. Shaw.*

6 July 1876.

6238. Mr. *Ritchie.*] I understood you to state that, in addition to being able to bring water to bear immediately upon a fire without an engine, one considerable advantage that you placed before yourself was, that in any case, even if there was not sufficient pressure to reach to the top of the buildings, you would be able to get immediate access to the water upon the arrival of the engine?—Yes.

6239. And you have reason to believe that there is sometimes a difficulty at present in doing so?—Not in the City; but in Captain Shaw's Report, which we deal with here, he referred to some parts to the east of London Bridge, and on the south side of the river, where he had had occasion to complain that no water was there when he wanted it.

6240 And your investigation into the matter led you to believe that putting hydrants down would be the means of preventing the recurrence of any difficulty of that kind?—Quite so. I may say that Captain Shaw attended before my committee, and stated that he had never experienced an instance of the insufficiency of water in the City at all.

6241. Do you think there would be any difficulty whatever in your City police working with the fire brigade?—I think not.

6242. Captain Shaw represented to the Committee that if the police throughout the metropolis could give assistance to the fire brigade more than they do, it would be of great service, and that the only difficulty he saw in the way was the division of the responsibility?—I do not think I should divide that; I should keep it as it is; but the police would be of assistance, and especially of importance on the initiation of a fire.

6243. And whilst the police were engaged at a fire, you contemplate that the City police should be under the command of Captain Shaw for the time being?—I contemplate that, but that would not be a matter upon which I could give an opinion.

6244. But you stated just now that you hoped that the City would be left to carry out their own arrangements in that respect, and I thought it might have been a matter which had been considered, whether the City police would be empowered to give whatever assistance Captain Shaw required?—I have no doubt that that would be the result, but of course I cannot speak upon that point myself, not being empowered to do so.

6245. What is the position of the City with regard to the Metropolitan Board of Works upon that question. Could they at any time have compelled or requested the water companies to put up these hydrants, and then charge the City with the cost?—That, I believe, is the reading of the Act, but I am not a member of the Metropolitan Board of Works, although I have acted in a very friendly way with Sir James Hogg.

6246. I thought perhaps that when the City made up its mind to put down some of these hydrants, it might have become a question with them whether they were incurring an expense which they would not have been bound to incur if it had been done by the Metropolitan Board of Works?—Here is the answer to the question in the 11th page of the Report of the 30th July 1874. It says: "It also appears that the pressure of the present water supply of the City has sufficed hitherto, and may be greatly increased, without any additional works, whenever it may be expedient to add to it, but that notwithstanding the efforts made by the New River Company, and the arrangements to meet the requirements of the case, we are of opinion that the system of street plugs, which makes the attendance of a turncock necessary before water can be obtained, is not suitable to meet sudden emergencies, which must necessarily occur in every case of fire; and that to secure a quick obtainment of water, it is absolutely essential for the protection of public property that a proper number of constantly-charged hydrants be fixed, which will represent an immediate supply of water. So far as the cost of the hydrants which should be erected in the City is concerned, it becomes a question whether the said cost is one which should be borne by the Corporation, or left (as provided by the Fire Act of 1865) to be borne by the Metropolitan Board of Works." One had to feel one's way in that matter, and I did not know whether the Metropolitan Board might object to what we were doing; but I made inquiries, and I found that they would make no objection to our doing it at our own cost; this is being done out of the City's cash: there is no rate made for it. We are absolutely coming forward to

Mr. *G. Shaw.*
6 July 1876.

protect the property and the lives of the citizens without charging them a farthing for carrying out the work.

6247. In point of fact the City is now doing at its own cost what by the Act of 1865 should have been done by the Metropolitan Board of Works at the cost of the whole of London?—Which might have been done.

6248. And the City was content to incur that expense out of their own pockets because of the great importance they attached to having these hydrants?—Decidedly so.

6249. Mr. *Onslow.*] Have you ever considered the propriety of amalgamating all the water companies in London together?—No.

6250. You have not gone into the question of the expense of that?—No; I think that would be a very expensive affair; we in the City do not care about that.

6251. What should you say would be the average height of the pressure given by 126 feet 6 inches, which, when a hose could be applied to a hydrant, would be useful in case of fire?—Of course I can only give you my experience of Christ's Hospital, where at a height of over 70 feet there was an ejective force of something like 8 feet or 10 feet from the nozzle of the hose.

6252. *Chairman.*] Over 70 feet in height, plus a length of 30 feet of hose in the first place?—Yes.

6253. Mr. *Onslow.*] What distance apart are you putting your hydrants?—One hundred yards; that is to say, that every house in the City shall be within 50 yards of a hydrant from its street front; we, in some instances, put them much closer, but that is the rule we have adopted; that leads to another matter; in this inquiry, for the purpose of ascertaining the number of hydrants which would be required, the Committee found on going to the New River Company that they had a map, and they kindly allowed the architect of the City to make a tracing of that map, and we put down throughout the whole of the City the several points which we thought would be most desirable, and the engineer to the Commissioners of Sewers and myself, marked them upon the streets as nearly as possible. For instance, where there is a corner where a hydrant could be placed with advantage, we did not adhere to that distance strictly, but moved it so that it would be most available for any fire which occurred.

6254. *Chairman.*] So as to economise the number of hydrants as far as possible?—Yes.

6255. Mr. *Onslow.*] You propose to have an uniform kind of hydrant laid down in the City?—We must have that, for the fire-brigade screw.

6256. And all these hydrants which you have been talking of in the City, and at Christ's Hospital, and Bunhill-row, are of the same kind, I presume?—Quite so; I may also mention that within the last twelve months I laid down and fixed hydrants through St. Paul's; that is to say, through the Crypt, and those are all with the brigade screw.

6257. Are you aware of the cost of those hydrants at St. Paul's and at the banks?—Yes; but then they are different from what we shall fix in the streets; they do not come to more than about 3 *l.* or 4 *l.* each; under 5 *l.* at all events, but they are simply made so that they can be got at easily. They are fixed in the face of the wall so that you can get at them from within.

6258. The great cost of laying down hydrants is in taking up and putting down the pavement, I presume?—That is a great part of it, but we are saving that.

6259. How many hoses can you apply to each of your hydrants?—We shall be able to apply two in the City, because we shall have the posts with two outlets with caps to them.

6260. Sir *Henry Peek.*] You mentioned the New River Company only. Do I understand that the New River Company supplies the entire of the City?—The whole of the City, with the exception of a little bit round about Aldgate.

6261. But if the City agreed to spend 20,000 *l.*, I suppose that will be spent all over the City, and not in any favoured parts?—No, all over the City.

6262. At Aldgate you would then come into the East London District, would you not?—This is not exactly in Aldgate; it is a little liberty down a court there; it is in no way connected with the City.

6263. Is

6263. Is the pressure the same there?—Yes, all over the City.

6264. I understand that the New River Company are in that position with regard to pressure that they could put on any pressure they wished with regard to the houses?—They could give 430 feet if they wished it; they have their district arranged in terraces; they have a model at the New River Head showing the different heights which they can attain and lay on; but if the present fittings were allowed to remain it would blow them to pieces.

6265. The City is more favourably situated than any other part of the metropolis, is it not?—I should imagine so, but still at the Kent Works they work very well.

6266. I ask you that because a gentleman who was here on the last day said that the pressure of some of the companies was nearly nil?—I think the East London Company is the worst. They do not deliver higher than 40 feet, but 40 feet is a very good thing if you have a hydrant. A fire does not necessarily take place on the roof of a house.

6267. If he told the Committee that 40 feet was the maximum, and that if they are drawing off for domestic purposes and other purposes, that 40 feet reduced itself to nil, you would not consider that pressure of any value for the purposes of hydrants?—I have never seen that nil; besides, having a hydrant there is certainly better than the possibility of having no water at all; if you have it connected with the main you have the full advantage of what is in the main.

6268. And you say the City is doing this with its own cash?—Entirely so.

6269. So that I, as a citizen, am not being charged by the Metropolitan Board of Works as well?—You are not; not one halfpenny.

6270. Mr. *Stewart Hardy.*] The Honourable Chairman and one or two other Members have asked you whether you continued those experiments upon those different streets for any time. Are you aware that in the case of the New River water supply it is a gravitation supply, and therefore the question of time would not enter into the matter?—No, it is not a question of time, it may go on for six weeks.

6271. Mr. *Hankey.*] Are there not some establishments in the City of London, such as the Bank of England, for example, where there is a perfectly independent supply of water quite beside that which is adopted by the City of London?—They have at the Bank of England the means of raising water from a well to tanks, but they are not independent of the New River Company.

6272. I do not mean as to water, but as to hydrants, and the means of applying the water which is there?—There are in private establishments something like 600 or 700 hydrants laid on.

6273. *Chairman.*] I think it is the fact, is it not, as mentioned in Major Boulton's Report, that there are over 2,000 hydrants in private establishments in London; 2,077, I think?—I know myself in the City (I do not know what there is outside) that there are about 700 hydrants in private establishments. A good many of them have been put up within the last few years.

6274. Mr. *Stewart Hardy.*] In fixing those hydrants I suppose, in estimating the distance they should be apart, you took into consideration the value of the property they were to guard?—Yes.

6275. And, therefore, you would consider it wrong for the Metropolitan Board of Works to say that there should not be a certain number of hydrants fixed throughout London, but that they should be placed in reference to the value of the property?—Quite so.

6276. Mr. *Forsyth.*] You stated that the hydrants proposed to be placed in the City would be very much larger than those in the Temple?—You would have them half an inch larger.

6277. I am not talking of the internal hydrants, but of the external hydrants; are they the same size?—No, we intend to have them larger; one is 2½ inches, and the other three inches, and perhaps a little more expensively made; they may cost a pound more.

6278. I do not know whether you told the Committee this; how many hydrants have the City put down already?—We have got down branches for over 150, and upon the Viaduct we have about 26.

Mr. G. Shaw.

6 July 1876.

6279. Altogether how many have you?—We have 83 being laid down this year. I could not give you the exact number altogether.

6280. Can you give the Committee an idea of the number that will be required?—About 900.

6281. In addition to those in private establishments?—Yes.

6282. I think you stated just now that the East London Waterworks Company gave the least pressure of all the companies?—I do not say that, but I say that they do not profess to give a higher pressure than 40 feet.

6283. Mr. Bramwell told the Committee that the East London and the New River Water Companies are the only two companies bound to give pressure higher than the pavement, and that they were, therefore, in an exceptionally good position for extinguishing fire?—The New River Company give a very high pressure, no doubt. The East London Company, no doubt, only profess to give a pressure of 40 feet in height above the pavement.

6284. Then as I understand there are no other companies besides those two which are bound to give a pressure at all above the pavement?—I do not know what they can do, but they are found to do it.

6285. Do the East London Water Company and the New River Company both supply by gravitation?—The East London Company pump, I think.

6286. Mr. *Hardcastle.*] What is the street mileage in the City?—I think it is about 90 miles.

6287. Are you clear upon that point, because that is inconsistent with the statement you just now made with reference to the number of hydrants that will be required?—But that will be taking into account all the alleys, and so on. We take into account the main streets. I say we shall have hydrants within 50 yards of the street front of every house.

6288. Do you know what the mileage of that street front will be?—I really can hardly tell you. I am not quite sure about it.

6288. If you are correct in saying that they are about 100 yards apart, and that there would be 900 hydrants along this street frontage, you can easily calculate the mileage?—You cannot very well, because in taking the length of the streets in the City a great many of them would be included say in 50 yards. We should fix them in the corners, and although it might be 50 yards from one point to the other, it might also cover a considerable distance in another direction, and we are fixing them so as to avail ourselves of those advantages.

6290. Do you know the assessed valuation of the City?—It is over 3,000,000 *l.*

6291. I was anxious to ascertain, if I could, what the relative cost would be, after your experience in the City, of laying down hydrants throughout the whole of the metropolis, as compared with the City?—That would be a matter which would have to be calculated with regard to distance from the constantly-charged mains to the site of the hydrant if the same plan were adopted, namely, of laying them down when the streets were being repaved.

6292. You stated that the City had funds of their own. May I ask what those funds are derived from?—From the funds belonging to the City, just as the money might belong to any private individual. They have looked after their own interests in past times with vigilance, and the result is that they have considerable property.

6293. *Chairman.*] You have stated that you have special knowledge upon this particular point; might I ask are you an engineer?—No; I am a contractor for a large amount of plumbing connected with pipes.

6294. Mr. *Hardcastle.*] May I ask whether your attention has been called to the great increase in the expense occasioned by the bursting of a pipe when a street is laid with asphalte, as compared with a street when it is laid with granite?—Yes, it is much more expensive to make a good street with asphalte.

6295. Have you found that when the streets are paved with asphalte, the water, being unable to find a vent, has often penetrated into cellars?—Yes.

6296. Which is not the case when the streets are laid with granite, is it?—Sometimes; it depends entirely upon the character of the soil. Sometimes it may be that the leakage is at the bottom of the pipe, and the water will find its way right through into the cellars, instead of coming to the surface.

6297. But, as a matter of fact, is it not much more difficult to discover the point of leakage when the streets are laid with asphalte than with granite?—No, I do

Mr. *G. Shaw.*

6 July 1876.

I do not think it is; because as soon as the leakage discovers itself in a house it is made complaint of and attended to.

6298. I have heard a complaint by the water companies that the expense incurred on the bursting of a pipe, when a street is laid with asphalte, is more than 20 times as great as when it is laid with granite; you do not agree with that statement?—No; the statement I have heard was, that you could have granite made good for 1 *s.* 10 *d.* per yard, whereas the other would cost 16 *s.* per yard; therefore there would be that difference.

6299. But the difference is much greater than that, is it not, in consequence of the difficulty of finding the leak?—I have not heard that.

6300. Mr. *Forsyth.*] Have you had occasion, in putting these hydrants down in the City, to alter the pipeage in different streets?—No, we simply attach the hydrant to the main; that is all.

6301. Because we have been told by Mr. Bramwell more than once that a very considerable item of cost would be the alteration in the piping?—That is not part of my proposal.

6302. *Chairman.*] You do not contemplate placing upon the service-pipes at present used any of your hydrants?—No.

6303. Mr. *Forsyth.*] You have put down some hydrants in old streets already, have you not?—Yes, we attach them to the constantly-charged main. Of course upon the intermittent system they are all attached to this main, but we do not interfere at all with the intermittent system. We have a branch direct from the main, and then have a hydrant at the end of that.

6304. Why could not that be done over the metropolis?—I see no reason why it should not. There must be in the metropolis constantly-charged mains from which these intermittent service-pipes draw their water. If, therefore, they take a branch from these constantly-charged mains and attach to the end of it a hydrant, they will do the very same thing that we are doing in the City, without touching the domestic system at all. I ought to add that there might, as has been referred to by Captain Shaw, be outlying places where there had been no water, where it would require a continuation of the larger pipe. There is no doubt about that, but that does not affect the principle.

Mr. *George William Lovell*, called in; and Examined.

Mr. *G. W. Lovell.*

6305. *Chairman.*] You are Secretary to the Phœnix Fire Office, and Chairman of the London Salvage Corps, are you not?—I am.

6306. In that capacity you will have had your attention very constantly directed to the question submitted to this Committee, namely; the question of the protection of property from fire in London?—Yes, we are very deeply interested in it.

6307. It is a part of the original London Fire Brigade Act that the insurance companies should make certain contributions, according to their insurances, for the support of the fire brigade?—It is.

6308. It has been submitted to this Committee, that if any proposal is made for increasing the general contribution of the ratepayers towards an enlarged fire-brigade, it would be only right that the insurance companies should be called upon for an additional contribution. I should like to ask you if you have considered that subject, and whether you would wish to submit to the Committee any evidence upon it?—My own feeling is a very strong one that the contribution of the fire offices ought to be very sensibly diminished. When that contribution by the offices was agreed to of 35 *l.* upon every million insured, it was for the purpose of raising a fund to be applied to a specific purpose, which was the extinction of fires. Now a very large portion of that annual fund has been diverted from that purpose to another, in which the fire insurance offices have no interest whatever.

6309. I suppose you refer to the fire-escapes for the protection of life?—Yes; why the contribution of the fire-insurance offices should be increased while their money is being applied to purposes for which they do not subscribe it, I am unable to understand. Another thing is that the experience of the offices has been in some respects very unsatisfactory, that not only is a large portion of

Mr. *G. W. Lovell.*

6 July 1876.

our money applied for purposes in which we have no interest, but also that what we do retain is of a lower character than it was before; that is to say, stations have been abolished, and stations have been removed. I do not think the position of the fire offices is very clearly understood. We do not, and never did, undertake the protection of the metropolis from fire. I do not know of any place in the world where the insurance offices do so; it is always a municipal obligation.

6310. What I suppose you would represent to the Committee is that the original brigade, which was started and supported by the insurance companies, was a brigade started more in their own interest, and to protect their own property, if I may so call it, than with the view of protecting the metropolis?—It was done for the purpose of limiting the range of fires where fires might have been enormously destructive. The offices placed their stations in centres where there were very large accumulations of property. With regard to the more outlying places, you must look at the thing in a money point of view. It would not pay to be at the expense of a station to meet an occasional 1,000 *l.* fire, or something of that kind, in a single house; but when you come to the docks, the wharves, the warehousemen round Cheapside, and the book trade of Paternoster-row, and the valuable stocks in Fleet-street, and so on, the theatres, and all those places where enormous sums might be lost, there the offices, for their own protection, supported, at their own expense, the brigade. It originated in the independent engines of the offices; but so many independent firemen did not work smoothly together, and the offices then began to associate into a brigade, to which each contributed its engines, and other offices gradually joined them. That was the origin of the brigade, but the engines they kept, and the expense they went to, were purely for their own protection, and that was so well understood that when frequent applications were made to them to establish stations, say, at Paddington, which I recollect, for example, they gave as their answer that they could not afford to do it, and that they did not undertake the protection of Paddington; that they had no sufficient accumulated interest of their own to make it worth their while to do it; that the parishes had the power of providing engines and firemen for themselves, and that if they desired that protection they must exercise that power.

6311. Therefore that distinctly established the position that the fire brigade which then existed was established for the diminution of the risk of losses to the insurance offices, not at all contemplating it as a protection to the metropolis?—Never; that was always completely denied.

6312. And you would maintain that that protection always ought to fall upon the local authority, and not upon a private authority?—As far as I can learn, it does so. I inquired from Paris, where they have a very strong body of Sapeurs Pompiers, if there was any contribution from the offices, and my correspondent, who is the manager of the largest office, seemed quite surprised at the question. He said, Certainly not; it was altogether a municipal charge. Sometimes the firemen, he said, rendered them very special services, and the offices would make them a present of a little gratuity upon such an occasion, as an encouragement to them for the future.

6313. Are you aware whether the system which has been adopted in the metropolis of a contribution by the insurance offices is in force in other parts of England?—There is no rule. In Manchester, by special agreement with the Manchester corporation, the insurance companies agree to pay a fixed sum yearly, the corporation undertaking to supply the use of engines and firemen within the boundaries of the borough.

6314. Are you able to give evidence as to whether that was included in the Manchester Fire Brigade Act as it is in the London Fire Brigade Act, or was it merely an agreement?—Certainly it was a special agreement, because some offices refused to concur in it.

6315. Then it is a voluntary agreement between some offices and the Manchester authorities?—It is a voluntary agreement between some of the offices and the Manchester authorities.

6316. But not a statutory obligation upon the insurance companies as it is in London?—I imagine it is not, but I do not possess the necessary knowledge to speak with certainty upon that point.

6317. At the time of the passing of the Fire Brigade Act, I suppose it was a voluntary contract between the insurance companies and the local authorities that

that whilst the insurance offices handed over a certain given property, that is to say, their plant and stations to the metropolitan authority, they should for the future only contribute a certain amount which is fixed in the Act?—It was a matter of gradual agreement before the Bill was brought in, I believe. I was not a party to it myself, therefore I cannot speak with confidence about it; but the kind of compromise which was made upon the occasion was that the offices consented to pay 35 *l.* upon every million insured, and to give over their plant. I was very anxious at the time that there should be introduced into the Act a clause that all the existing stations of the offices should be retained, and maintained upon their full existing strength. I believe a motion to that effect was made in the House, but it could not be carried.

6318. You mean that that should be placed in the Act?—I was very desirous that it should, but we were told that it would be a very inconvenient thing, and that we must trust to an honourable carrying out of the intentions of the Act, and that it might not always be possible to keep an engine station in the same place. I could not get that introduced; I was very anxious that it should be, because I said our position is a peculiar one; the offices do not undertake the general protection of London, nor have they any adequate interest in protecting the outlying portions where nothing but small ordinary fires will occur, while they have an enormous interest in protecting certain points where there are large accumulations of property, and they can hardly have too much force there. They have, guided by their experience, and by their knowledge of what their obligations are, fixed certain points in proximity to those accumulations of value, and have there placed their stations, and decided how many engines and how many men should be at each. And as that principle would be very likely to be lost sight of (in fact it does seem to have been lost sight of greatly of late years), I was very desirous that it should be fully recognised, but the Government discouraged that view, and at last a compromise was made, and we were told that we must trust to an honourable understanding in carrying out the arrangement.

6319. You would represent to the Committee that subsequently to the passing of the Fire Brigade Act, that sort of implied understanding has been departed from, by the removal of certain stations from the places where the insurance offices considered those stations more immediately necessary, and that in addition to that something has been introduced as part of the duties of the brigade which is entirely foreign to the business of the insurance companies?—Yes, entirely. I have had some interviews with the Metropolitan Board of Works, and their answers to all the representations made by the offices have been essentially this: We have not got the money. Now the money which they have got, and to which the offices contribute their proportion, was for the extinction of fire, but I should think a fourth part, probably, of this money has been absorbed in the protection of life, a subject altogether foreign to the interests of the fire offices, and if you take away two from eight there will only remain six, and the six will not do what the eight would have done.

6320. You stated that certain representations had been made to the Metropolitan Board of Works; do you refer to representations with regard to the removal of those stations?—There have been those. One station has been removed which the offices feel very much aggrieved by; that is to say, the station in Farringdon-street, which lay midway between two very important thoroughfares: Fleet-street and the Strand, and Holborn and Oxford-street. It lay very near the great book mart of Paternoster-row, and that district where there are very great accumulations of property. I think that I am correct in saying that Clerkenwell pressed very much for an engine station there, but that the Board had not got the means of furnishing them with an additional station, so they moved away our old station to put it up in Clerkenwell, where the offices, for their interests, did not require it at all, because there were no great accumulations of property there.

6321. In your opinion, and in that of the insurance offices, their interest has been prejudiced seriously by that removal?—We think so.

6322. And you have made representations upon that subject to the Board, I think, at various times?—We have made representations upon many points, but we have never got assistance or attention upon any of them. The fact is, that while the Metropolitan Board consists of delegates from parishes, we have no representation at all there. We furnish now something about 20,000 *l.* a year

Mr. *G. W. Lovell.*

6 July 1876.

to the funds, but we are totally unrepresented, and our interests appear rather to be thought, to this extent, antagonistic to those of the bodies forming the Board; that we want our powerful stations at certain points, while the outlying portions of London want stations in their own neighbourhood, which is a very natural want. There is one going to be erected at Shooter's Hill, I believe, for example.

6323. Do I understand the insurance companies to express a wish, as they contribute a portion of the funds, that even if the present contributions are continued under the Act of 1866, they should be represented at the Board?—There are offices who are very strong in their feeling upon that subject. I confess I do not feel very strongly upon that point myself, because I think that one representative of the fire insurance offices at the Board would represent interests so foreign to those around him that they would have no feeling with him; he would be bowled over in everything he proposed. I should certainly myself decline to be that representative.

6324. You therefore think, as I gather from you, feeling this disadvantage of having no representation with this contribution, that the position of the fire-insurance offices is anomalous in regard to this contribution, and that in any fresh arrangement it should be considered not only whether they should be charged still further, but whether they should be charged at all?—Judging from the practice of the rest of the world, according to my information, they should not be charged at all; but having once made what I may call a concession, we have got into an unfortunate rut from having once commenced keeping a brigade, and it was not easy to get out of that rut. We agreed to a certain amount of contribution, and we wanted to burden that with certain conditions; those conditions we were unable to enforce, but it was understood that we might perfectly trust to the body who had the management of the brigade for the carrying out of their duties in the most efficient way. They appear to be under very unfortunate influences. I do not make any charge against them, because I do not imagine that any body of men could escape from it; that is to say, they are constituted the delegates from all the parishes of London, and all those parishes knowing that it is not merely property which is at stake, but that their homes, their business, and the lives of themselves, their wives and children are at stake, are each very desirous of having a station, and a good station, in their own neighbourhood. The Board of Works, I daresay, finds it a very difficult thing to resist the pressure put upon them from all quarters, and they say, "We have spent all the money we have got; we have not got the money to do it," and then they pinch off a little somewhere else. Two stations have been dropped in a very important line which had been established by the offices, and there are other alterations. The removal of the Farringdon-street station is thought by the offices to be very prejudicial to them; and it appears from what I read in the newspapers to be very much like decided on that the head-quarters of the brigade are to be removed from the centre of the City and taken to the other side of the water, to Southwark.

6325. You stated that Farringdon-street station was one of those removed; what others did you refer to?—Well-street, Oxford-street; Southwark Bridge-road, and Wellclose-square removed; Waterloo-road temporarily closed, and Whitechapel and Crown-street, Soho, abolished.

6326. The Waterloo-road one has been opened again, has it not?—Just this last year, I understand. Then, with regard to the docks, the station we had in the immediate neighbourhood of the docks has been removed to a greater distance; that is to say, another has been substituted for it; a very good station, but further from the docks than the former one was. The offices made representations upon that subject, and many others.

6327. You refer to the Wellclose-square station, do you not?—Yes, the Wellclose-square station has been removed to the Commercial-road.

6328. And you say that the fire insurance offices have represented this to the Metropolitan Board of Works, and that you have not got, as you say, any very satisfactory answer from them?—No, we have never got anything from them; I have myself grown tired of failure, and I have protested against being made the organ of any further representation. I will not say that the insurance companies are tired of making applications, because further applications are frequently proposed; but I say that I wish they would make them through some one else; it is I who am tired of them.

6329. You

6329. You say that the applications which have not met with such favourable consideration as you would wish have been with regard to the removal of those stations; but have not the insurance companies also made other representations, from time to time, to the Metropolitan Board of Works?—Several.

6330. And made them with the view, as we know, of increasing the efficiency of the brigade as against fire?—Quite so.

6331. Were those representations limited to any particular places, or did they refer generally to the metropolis?—There was one with regard to the steam floats, which was very strongly brought before the Board, and the application was denied, some very curious reasons being given for the denial. One of them seemed to be that a weight of two tons would displace as much water, and sink a vessel as low as 20 tons, which I could never understand.

6332. The insurance companies also made representations with regard to the floats, in favour of the establishment of smaller floats, in order that the power of the engines might be brought more readily to bear upon dock property and other property by the river side?—Yes, our desire was that these small, light, handy vessels should fulfil an office which you were half an hour ago talking about, with regard to hydrants, that they should stop a fire or keep it in check at the beginning until more powerful apparatus arrived

6333. That application was based, was it not, upon the ground that the more powerful floats require a considerable time to get steam up and to bring them to the scene of a fire?—I believe it could be proved to be so. At the last fire at Brook's Wharf a gentleman who was present says the steam float was brought up very promptly indeed, and began to play very promptly, only that for some reason or other the water would not reach the fire, and that after playing a few minutes the water ceased playing altogether.

6334. Was not that because the wind was setting very strongly against the engine, and dissipated the water in spray very much?—That was not what this gentleman said.

6335. Are you prepared to speak with any personal knowledge with regard to the fire at Brook's Wharf?—No, I am not.

6336. The objection was that which you have already described, that under the idea that a certain time must elapse before the large float could be brought to bear upon a fire, it would be very advantageous if smaller floats could be established which would bring water to bear upon a fire at once, and keep it in check until the more powerful ones could be brought into play?—Quite so.

6337. There was a letter, dated the 23rd November 1871, I think, in which the fire offices called the attention of the Board to the desirability of the employment of these small vessels?—Yes.

6338. There was an interview with the Metropolitan Board of Works upon the same subject in 1872?—Yes, when they inquired what we were going to supply towards the expense of them; we told them nothing at all, that we considered we paid abundantly in our contribution already.

6339. The answer to that suggestion was an inquiry upon the part of the Metropolitan Board of Works, as to whether you proposed this alteration at your own expense, or whether it was to be at the expense of the ratepayers?—That was the first question.

6340. Can you tell me what the final answer of the Metropolitan Board of Works to this application was; was not it conveyed in a letter from the Board, of December 1871?——

The Committee-room was cleared, and after a short time the public were re-admitted.

6341. I was asking you, before the Committee-room was cleared, whether you were aware of the answer to this application upon the part of the insurance offices with regard to small vessels, which was made finally by the Board in 1871?—It was a sort of pooh-poohing of the subject, to say that we evidently did not know anything about it, and that a small vessel would draw just as much water as a large one. We met that by offers of contracts from Messrs. Shand & Mason and others, who would undertake to build vessels holding a sufficiently powerful steam engine for our purposes, which should draw only 18 inches of water forward.

Mr. *G. W. Lovell.*

6 July 1876.

6342. The principal point stated in answer was, was not it, that the funds were not forthcoming?—Yes, that they had no money.

6343. Did the insurance companies represent anything in favour of a junction as between the different water companies?—That was another point which we recommended.

6344. To which you attached considerable importance, as insurance companies?—Yes, there were many offices that did; which looked forward to that which I do not think has ever happened, namely, to some accident depriving one company of its water altogether while a large fire was burning; and they considered it a very desirable thing, and the water companies were themselves willing to do it (in fact the junctions in some cases had been already made, though they had gone out of use), if the water companies were able to supply in case of need (keeping their own keys) each other's districts with water for the extinction of a fire.

6345. That suggestion was made at the same time, was it not, that the other suggestion was made with regard to the small floats?—I think it was; there was a letter upon the subject to the Metropolitan Board of Works upon the 23rd of November 1871, and a letter upon the 1st of January 1872; an interview with them in March 1872, and a letter to the Board again in May 1872; all those letters are at the service of the Committee. There was also an interview with the Metropolitan Board of Works on the 4th of June 1872, and a letter to them in December 1871.

6346. Those letters may be principally summed up in this: that the letter of the 23rd November 1871, embraced most of the suggestions, although it was supplemented afterwards by interviews, and that in December of that year an answer came from the Metropolitan Board of Works?—Yes, and dividing our application into three points; refusing them all three.

6347. Those three points were the adoption of these small floats, the necessity of having turncocks kept at each of the brigade stations, the water companies paying for their lodgings, and the junction of the different companies' supplies in order to bring to bear the whole of the different companies' water upon any point; is that correct?—I doubt if those three were in that letter, because the third, as I recollect, was a suggestion for putting the brigade stations in telegraphic communication with the police.

6348. But with regard to the turncocks, I believe you made some representation?—There has sometimes been great delay in finding the turncock; he has been out and nobody knew the condition of the water company's supply at the time, and sometimes on opening the plug they have found no water in it, because the water in that main had been turned off.

6349. All this goes to show that the insurance companies have upon several points upon which they thought additions might be made to the security of London, written to the Metropolitan Board of Works suggesting improvements?—They have done so.

6350. And as yet, in your judgment, the Metropolitan Board of Works have not carried out those improvements in a satisfactory way?—It is not a question of my judgment; they have conceded none of them, but have absolutely refused them.

6351. I suppose the insurance companies, as contributing largely to the maintenance of the fire brigade, thought they were justified in having a voice, to a certain extent, in the increased protection of property?—Quite so; the brigade used to be under our own management, and then the firemen were our servants, and when the charge passed to the Metropolitan Board of Works they were no longer our servants; we could no longer give them instructions, or do anything with them; they were the servants of other people; but still the offices contributing from 12,000*l.* to 20,000*l.*, which I believe it will be this year, thought themselves entitled to call attention to measures which they thought would be for their interest, and for the general protection of the metropolis.

6352. And finding their suggestions were not favourably received, they are not prepared to encourage the idea of contributing more largely in future to the maintenance of the brigade?—Not in the least. The feeling is a very strong one, as I say, to the contrary; we feel that the money has been so much applied to other purposes that we are entitled to a reduced assessment.

6353. You

6353. You say that the duty of maintaining a fire brigade is rather a municipal duty, or one applicable to the local authority, and that the fire insurance offices should not contribute to it; is that your position?—That would be harking back, perhaps, rather further than I should like to propose, after the concessions which we have made, but I do not think that the fire insurance offices ought to contribute at all. The various London parishes, by their local Acts, possessed authority to provide engines and men, and to charge them upon the rates. I do not know more than four of the parishes of London which effectively did that. They trusted to the brigade, and now those engines are all merged in the general arrangement of the Metropolitan Board of Works, which, of course, overran all the partial provision and protection for isolated parishes.

6354. And, therefore, while the insurance companies are prepared to let things remain as they are, in consequence of having made this bargain, yet if any question were raised with regard to increasing the charges upon them, they think the whole question should be re-opened?—I think so, and I think that is their feeling.

6355. Is there any other matter which you wish to represent to the Committee from the point of view of the insurance companies?—I do not think so, except that if the Committee would like to see anything further of the correspondence, I am expecting it to be bronght here every moment, when it will be placed before them.

6356. Mr. *Ritchie.*] I think you stated that you did not think that in theory the insurance companies should contribute at all?—No, neither in theory nor on the practice of the rest of the world.

6357. Did you mention the Manchester arrangements?—The arrangements at Manchester were the subject of negociation with the corporation of Manchester as to how much the insurance companies would be willing to pay in a gross annual sum, the corporation upon their part undertaking to provide engines and men for fires within the boundaries of the corporation.

6358. And the Act in Manchester provides, does it not, that those who are interested in the preservation of property shall pay for the extinction of fire upon their property?—I am not familiar with the Manchester Act.

6359. Of course you would say that the insurance companies were interested in the preservation of the property which was insured?—Certainly, but not alone.

6360. But they have an interest?—They have an interest, of course.

6361. That is to say, if a house is insured for 1,000 *l.*, of course the insurance company is almost the only person who is interested in that being extinguished when it once takes fire; is not that so?—Certainly not, because the house may be worth 2,000 *l.*, and the business carried on in it may be worth 5,000 *l.*, and the lives in it will be inestimable; there is a great deal beyond the business of the fire offices, and every man insures for what he pleases. We have not unfortunately in this country what they have upon the Continent, namely, a universal average clause; that is to say, if a man only assures a proportion of his property he only recovers a corresponding proportion of his loss. We are liable for all loss sustained in ordinary cases, up to the amount insured, except in some cases, where there is an average clause, as in the case where divided property is insured in an undivided amount.

6362. Is not factory property under the average clause?—No, very little indeed of that. Mercantile warehouse property is generally so, because the merchant's goods are sent, say to the London docks, and he has no choice what warehouse they shall go to; therefore he must have his insurance in whatever warehouse they may be. That involves the average clause. If you have a house in Whitehall and a house in Whitechapel, each worth 3,000 *l.*, and you have a policy payable upon whichever the fire occurs in, you have clearly two chances of realising for one insurance. With regard to ordinary insurances, if you wanted to insure your furniture or house, there would be no average condition in that. We undertake to make good all loss sustained up to the sum insured.

6363. So that taking a case, where both the house and the property in the house are fully insured, of course it is the insurance companies' interest and theirs alone, looking at it from that point of view, to have the fire quickly extinguished?—That is looking at it from a partial point of view. It is seldom

Mr. *G. W. Lovell.*
6 July 1876.

that an honest man can have a fire without suffering greatly from it in the disturbance of his trade and business.

6364. Would you think it was quite right and proper that a man should pay in the shape of rate for a portion of that protection and in the shape of perhaps an increased premium, in consequence of the insurance companies having also to contribute?—That would never find its way into the premium.

6365. But we have had it contended that the insured should not pay for the uninsured; an insured person pays his rate, and he pays his premium on his policy; for his premium, if his house is burnt down, he gets the amount of money which is lost, and he also contributes to the protection of his property by means of the rate; but of course, although he contributes in both ways, he is recompensed by getting back the money which he has lost by the destruction of his property?—One is a municipal obligation, and the other is a trade bargain; he pays the office so much, and they agree to pay him what he may lose by a fire up to a certain extent; that is entirely independent of any force for extinguishing a fire. There are places where you have no fire-extinguishing apparatus at all, and of course it is a disadvantage, but I cannot tell you any place in England where that is recognised in the premium. In fact from the experience of my own office the London business is the worst that we have. Our loss rate in London collectively is higher than it is anywhere else, and if you were to reduce the loss rate very considerably indeed it would still only put London on a par with the country.

6366. Do you mean to say that notwithstanding all the increased protection supposed to have been given to London by the formation of this new brigade, London is still below several other places in the protection which it enjoys?—I can only speak from my own experience. I have an account of the loss rate of our London business, of our agency business, and of our foreign business, and the London loss rate is very considerably the highest.

6367. Of course it is a good deal less than it was at the time of the formation of this new brigade, is it not?—I do not know that the loss rate has been affected at all by that. The loss rate, of course, bears a comparison with the premiums. The premiums are continually fluctuating, as the experience of the offices may show to be necessary. The premiums for mercantile risks have very much advanced. Except you come to some very large mercantile fire that will so far reduce the loss rate upon them, because you have increased the one factor; you have made your premium so much more, and if your losses remained where they were the loss rate would be reduced.

6368. But the evidence which has been given before the Committee is that the proportion of serious fires has very largely diminished in London during the last few years?—I do not know what the offices who insured the King and Queen Granary, which cost them about 200,000 *l.*, would say to that, or with regard to Brook's Wharf, which, notwithstanding that it was composed of several buildings, was burnt down and completely destroyed by one fire. By a mere piece of luck we happened to be very little interested in that, but there are offices which were interested very largely indeed.

6369. Sir *James Hogg.*] The question put to you by the honourable Member was, have not serious fires diminished very largely in the last few years?—I do not believe they have.

6370. Mr. *Ritchie.*] You do not agree with the evidence which the Committee have received to that effect?—A few years ago, we had three wharves burnt down by a single fire. There is no doubt that that was a serious fire. This was with the old brigade. More recently the whole of the massive block called the King and Queen Granary was burnt down, and the metropolitan brigade existed then. It was only the other day that Brook's Wharf was burnt down, still there was the same brigade in existence. I do not charge the brigade with the slightest neglect. I believe they do their duty exceedingly well, but when you come to the question of the contribution of money, I have a very strong feeling that the fire insurance offices having agreed to pay a certain amount of contribution for a given purpose, are entitled to have their funds applied to that purpose, and not to another with which they have no concern.

6371. With regard to these serious fires, is it the experience of insurance companies, notwithstanding the great increase in the number of the brigade, that in the event of any great fire taking place, although, as they say, they would be able

able to cope with it, the effect usually is that the building and contents are destroyed?—I believe that when a large building is once thoroughly on fire all the engines of London would not be able to stop it; that is a recognised fact; and that the fire brigade limit their efforts to the prevention of the extension of the fire to the adjoining buildings.

6372. Mr. *Stewart Hardy.*] Is it not also the fact that within the last 20 years, since the brigade has been taken over, the size of warehouses has very much increased in London?—We have endeavoured, by obtaining legislation, to limit the size to a given number of cubical feet, but we found it continually (I do not wish to use any offensive term), I will say, evaded, for we must look upon it as an evasion.

6373. It is the fact that such efforts have been made, is it not?—It is the fact that efforts have been made to restrict the size of buildings, from a feeling that with an exceedingly large mass of combustible property on fire, no engines can put it out.

6374. Mr. *Ritchie.*] You made rather a strong assertion just now; you say when a large warehouse has once taken fire you do not believe that all the engines in London would put it out?—When thoroughly on fire; such is what I have heard repeatedly from members of the brigade, from the late Mr. Braidwood and others.

6375. I suppose you mean that on a fire breaking out, by the time the engines arrive the fire has got too much headway to enable the fire brigade to cope with it?—The first question is, how much headway the fire has got. In this case of Brook's Wharf the engines were very prompt indeed in their attendance; they were sufficient in number; the men behaved exceedingly well, and yet the place was on fire, and though it was only a tea warehouse, it was entirely burnt out.

6376. Is not there some inquiry now proceeding with regard to how the place came to be burnt?—There is.

6377. And is it not charged that that house was set on fire, and set on fire in many different places at one time?—I do not know about many parts being alleged to be set on fire.

6378. But I would put it to you that if a building is set on fire at several different points at one time, the fire much more readily spreads than if it only takes fire in one point?—That is a matter of fact.

6379. I would ask you whether or not the quick application of water to a building on fire is not a great element in the question of a large building being utterly destroyed or partially destroyed?—I have no doubt about that.

6380. Because you stated that you did not believe all the engines in London could put out a building when it had once caught alight?—When a large amount of combustible material has once got thoroughly alight. I do not mean a fire up in one corner, but when you have a large amount of material burning it is admitted by the fire brigade that it is almost impossible to extinguish it. In fact water does not fall as water upon the fire, but rather as steam.

6381. If it be true that in 1868 the proportion was 25 serious fires to 75 slight fires; and in 1875, 11 serious fires to 89 slight fires, that would represent a considerable saving to the insurance offices, would it not?—That would depend upon the meaning of the word "slight."

6382. Supposing the same basis to be taken in 1875 as was taken in 1866?—That would appear to be so. There are occasions when we have an extra run of fires, and there are years, last year for example, when we have been very fortunate. In 1861 we were very unfortunate. How far this might influence the result I am not able to say. Of course it must be assumed that if you have engines on the spot they will do good service, or else the money is thrown away to maintain them.

6383. You will admit that if any improvement is made in the brigade by more money being spent on it, by which the per-centage of serious fires is still more reduced, that is of course to the advantage of the insurance offices?—That does not quite follow, because insurance is precaution taken, and money spent from the apprehension of danger. When you reduce that danger I am afraid the public, judging from what I have often seen, will reduce the amounts they insure for, and that if they no longer feel apprehensive they will save the absolute money by insuring for less. The cases where a man really insures the full value

Mr. *G. W. Lovell.*

6 July 1876.

of his property are I believe very few indeed. With regard to farming stock, none of the fire insurance offices can make a profit on that. I remember when the rate was 2 *s.* per cent. for it; the rate has now gone up to 5 *s.* At last it is got to this, that we resolved not to attempt to meet the thing by rate any longer, but by a proviso in the policy that if at the time of a fire the property were not insured for three-fourths of its value we would then settle under the average clause. I had a case in which a man the other day had an insurance of 200 *l.* upon some property worth 1,000 *l.*, and upon paying him a fifth part of his loss he is abusing us all over his own neighbourhood. He, in fact, expected to get a shilling's worth for twopence halfpenny, and we cannot carry on business in that way. Generally speaking, I believe that very few people insure to the full value, with the exception of merchants, who, being all insured under the average clause, are obliged to take care that they are fully covered, and they generally have a margin.

6384. Do you contend that the more secure you make property, and the more you reduce the losses of the insurance companies, the more the premiums will decline?—I never like to assume the office of a prophet, but I know that when people feel in a state of alarm they insure much more largely than when they feel in a state of security.

6385. I think you stated that a considerable proportion of the money which you originally agreed to contribute, and do now contribute, to the putting out of fires, is diverted from the putting out of fires to the preservation of life?—Of course all this life protection has to be paid for. I think there are 150 or 160 men of the brigade who are constantly employed upon that duty, and there are all the fire-escapes to provide for, which is not done for nothing. There have been calculations made, I do not know how far they are correct, that it probably takes about a fourth part of the total amount for that purpose, that fourth part being paid partly out of funds furnished by the offices for another purpose. I think, certainly, that the offices cannot be held to be further liable when the money supplied for one purpose is spent for another. We do not know what the next thing taken over may be.

6386. I may ask you this: If it were settled on a certain day that a certain sum of money was necessary for the due preservation of property in London from fire, if a fourth of that money were diverted to another source, the protection given to London could be said to be an adequate protection?—Those who furnished a part of the money for business purposes would have a just cause of complaint, because they would say, We furnished our funds from our business for business objects, and that money is diverted to objects foreign to our business altogether.

6387. You stated something about stations being closed, and you spoke about the head-quarter station being removed to Southwark?—I mentioned that as being a thing in contemplation.

6388. Do you know whether the fire insurance offices think, in the event of the head-quarter station being removed to Southwark, it would be advisable to retain the station still in the City?—We think so, certainly. Whether the station would be maintained in the same state of efficiency as during its old existence as a head-quarter station, I cannot form a judgment. It does not seem to be probable that it would be, because it would then be only one of the subsidiary stations, and you could hardly expect it to be kept up to the condition of a chief station.

6389. But still your offices would object to the removal of the brigade entirely out of the City?—I do not think it has hitherto proved of much use our objecting to anything. As regards the removal of the head-quarters, I do not think that we could at all prevent it. We might submit in silence.

6390. Are you prepared to give an opinion with reference to whether that station should be removed out of the City?—As regards the force left, I certainly think that force should not be diminished, especially when I look at Friday-street, and Milk-street, and Cheapside, where the Manchester warehouses are. A partner in Leaf's told me once that they were insured for a quarter of a million, and they still had a large amount of uninsured stock in some of the premises.

6391. But seeing that your representations with regard to Farringdon-street, which

which were of the same nature, were refused, you have not much hope that your representations will be carried out now?—I think we have got out of spirits since the time of the Farringdon-street question arising.

6392. Mr. Thompson stated, in answer to Question 5346, "Now, by moving the station from Farringdon-street, which was a poor old station, where fever constantly dwelt, and the men were afraid to live, by moving a little higher and erecting a first class fire engine station there, we have not only been able to cover ground which was previously entirely uncovered, but have been able to afford to the districts around Farringdon-street as much security as it ever enjoyed"; you would not agree with that?—I have no doubt he gives his candid opinion, but it is a very difficult thing to share it, or to suppose that Clerkenwell is as near to Fleet-street as Farringdon-street is, or that a call could be taken from Fleet-street to Clerkenwell in the same length of time that it could be to Farringdon-street.

6393. At any rate your offices are still of opinion that there ought to be a station somewhere in the immediate neighbourhood of the old station in Farringdon-street?—Yes, that was one of the localities which the fire insurance offices, when they had the thing in their own hands, deliberately chose as the point where assistance should be always at hand; it is a very excellent position indeed, it being midway between the two main branches of London, to say nothing of Paternoster-row and those directions eastward; Clerkenwell is removed from all great accumulations of property.

6394. And you are also of opinion that Wellclose-square station, notwithstanding what evidence we have had on that point, afforded a greater protection for the dock property than the station in the Commercial-road?—Such was the opinion of the fire insurance offices, but a great deal of explanation was given upon the point, and I would not say that the offices were very much prejudiced by that removal. It was shown how much clearer run they would have from Commercial-road, and so forth; but the offices, although they would have to pay if millions and millions were destroyed in the docks, had no voice in the position of the engine that the docks were to look to for the security of their property.

6395. With regard to the difficulty of getting water; has any representation ever been made by the fire insurance offices or the Metropolitan Board of Works upon the question of the discontinuance of the tablets which were put up to show the position of the fire plugs?—I am not aware of any representation being made upon the subject. In fact I did not know that they had been discontinued, because I see them upon my way to town. I was looking at them only this morning.

6396. Are you aware that originally the proposition of the insurance companies was for them to contribute 30 per cent. of the amount raised by rate for the purpose of the protection of property?—I was not aware of that.

6397. This is a paragraph from a letter from Mr. Brown to Sir George Grey, and one of the propositions he makes is, that the total annual sum to be contributed by the associated offices should be equal to 30 per cent. of the net amount of the metropolitan rate for the expenses of the brigade, but should not exceed in the whole 10,000 *l.* Do you think that if any re-adjustment is made at all of the contribution by the insurance offices, it would be fairer to have it upon the basis proposed there than upon the existing basis of 35 *l.* per million?—I think that if there be any re-arrangement the whole subject must be re-opened, and the offices, somehow or other, satisfied that there was the effective force kept which their interests required. It is not, I may say, a thing of any importance to the fire insurance offices whether a house worth 500 *l.* or 1,000 *l.* gets occasionally burnt; they would not go to an absolute outlay to prevent such a trifling occurrence as that; but it is where you have millions in the docks and millions in the streets in Cheapside, and other places near there. That is where they want to avoid ruinous losses. The smaller losses are things which, in the natural course of things, as long as wood will burn, must be going on; but tremendous calamities, such as the fire at Chicago, or the more remote fire at Hamburg, fall with tremendous force upon the companies. In Hamburg, during 200 years, there had never been three houses burnt down by one fire, so little can you rely upon statistics. Then a fire occurs one May morning and burns a third part of the city. The city of Hamburg particularly piqued itself upon its fire brigade; so much so, that when the fire brigade from Altona offered their services they

Mr. *G. W. Lovell.*

6 July 1876.

refused them admission, feeling quite certain they could deal with their own fires. My office lost between 200,000 *l.* and 300,000 *l.*, owing to that one fire, although we had made no imprudent engagements in single buildings; but the power of the fire was beyond the power of the engines to check.

6398. Do you know how many engines were employed in extinguishing the fire at Brook's Wharf?—No, I do not think that would come to us; it would come from the fire brigade, because they would know exactly.

6399. Has this question come before your committee; namely, the question of nearly all the available men in London being engaged at one fire?—That has frequently been mentioned, and, of course, it is a possibility, and a very serious one if it should occur. We, perhaps, are rendered rather apathetic upon the subject by its not occurring, but of course it might happen any night.

6400. Do your fire insurance offices think that that is a satisfactory state of things for a town like London?—I cannot imagine that anyone would say that it is a satisfactory state of things not to have any force which you may require to apply; but there evidently wants to be some limit put to that, because while two fires in two different parts of the town are possible, three fires are equally possible, and even four; you do not know where to stop in dealing with possibilities.

6401. But do not you think that the case of two large fires occurring at one time is a thing which might reasonably occur?—Still I am not aware of any case in which it has occurred, and I am not aware of any case in which the assistance has really fallen short of what was wanted.

6402. Has there come before your committee at all the question of whether, looking at it from the light of insurance companies, an additional number of men should be added to the present fire brigade?—I made the inquiry, "Have we ever from our own observation through the Salvage Corps found a deficiency of assistance," and I was told that we had not.

6403. Not at any fire?—No, not at any fire.

6404. Still you were not aware at any great fire how many men were left remaining in the other districts of London?—No.

6405. What district is the dock property in?—It is altogether in the east.

6406. In the C District?—I cannot answer that question.

6407. Can you tell the Committee what proportion of the property of London is insured?—No, I am by no means strong in statistics. Assertions have been made upon the subject, but I place no confidence in them, for I do not know how anybody is to arrive at the amount of property in London.

6408. You know the amount of property insured?—The amount returned from the insurance offices as chargeable under their metropolitan assessment would collectively show about 540,000,000 *l.*, but when you come to the absolute value of the property, I do not know how it is to be estimated by anyone.

6409. Mr. *Onslow.*] Out of this 540,000,000 *l.* which is the amount insured at the present time, have you a tabulated statement which will tell the Committee how much is paid by the different insurance offices on account of losses from fires year by year in the metropolis alone since the year 1866, when the Metropolitan Board of Works took over the brigade?—No; the offices are not in the habit of volunteering information of their misfortunes to each other.

6410. I have heard that there might be some objection to furnishing that information, but I think, for the purposes of this Committee, if it were possible to get that statement made out it would be very useful?—It would be a very laborious thing to make it a correct one, because although we have what we call our London Loss Book, in which the losses sustained in and about London are recorded, it would require an analysis of every loss to know whether it was within the legal metropolitan district or not; the experience of offices may also vary.

6411. Are there many cases of fraudulent fires brought to the notice of the insurance companies in London?—Even such a question as that is difficult to answer without reserve. There are a good many cases where a claim is settled at very much less than it is made at, and I have asked our valuer such a question as this: "Now here is a man who claimed 500 *l.*, and he has taken 300 *l.*; is that a man to trust for the future? Would it be proper to insure him again?" And his answer would be: "Much as usual; much like the rest of them; he sees his own side of the question, and I think he is honest, as most men go." Now some people would call that a fraudulent claim.

6412. But

6412. But I refer rather to willful fires?—I do not think they are so very numerous; but now and then we are able to trace them out. When a fire happens, it generally destroys the evidence of its origin; the place is burnt, and it is not easy to say how or why it was burnt.

6413. I presume that in the case of a known fraudulent fire, the insurance offices in London, as a rule, would have no objection whatever to prosecute?—No, that is not the case; the fire insurance offices do not desire to make themselves public prosecutors; they would lay themselves very much open to misrepresentation; there would be people who would cry: "These people receive your money, but as soon as you have a fire, they try to see if they cannot prosecute you at the Old Bailey for it." We consider that criminal prosecution one of the duties of the police, and we refuse, as a rule, to engage in it; I had a case some three or four years ago, perhaps, where we were quite satisfied that there had been a conspiracy to get up a fire to defraud us. We resisted the claim, and we resisted it as a civil action, and we got our verdict. Then having got that, it was so very monstrous a case that the question was brought before our directors whether it would not be desirable in such a very bad case as this to prosecute; we did prosecute in that case, and we got both the men transported for 14 or 21 years, or something of that sort. But since that there has been another case in which we felt equally certain that there was a combination and a conspiracy, and again we have resisted the claim, and again we have got our verdict. But the question was raised whether the office would in that case prosecute, and they submitted the evidence to Mr. Poland, the eminent criminal counsel, and he said they might obtain a conviction, but looking at all the circumstances, and that there were so many people concerned, it would be a very long, laborious, and expensive operation, and that therefore he would not advise a prosecution. Therefore the office, as an office, is merely conducting an ordinary civil business, and it leaves criminal prosecutions to the police, except in very rare cases.

6414. Then I may understand you to say that unless the case is a very bad one, the fire insurance companies in London would not take it up?—I do not think they would, but it is going beyond my powers to answer for what other people would do.

6415. Is it a fact that the police often prosecute in the case of fraudulent fires?—Certainly.

6416. And do they obtain convictions?—Yes, they obtain convictions; and in the country as well as in London. There is a woman now suffering imprisonment for a fire at a gentleman's house which occurred a little time ago; we did not prosecute her, but the police did, and she is in prison now.

6417. Speaking from your general experience, I should like you to give the Committee your opinion of what class of fraudulent fires your company, as a representative company, take up; that is to say, what sort of case would they prosecute?—They are really so few that I can only recollect one at the present moment.

6418. I think we have had it from some of the witnesses that the insurance companies do not object to small fires?—It is no use objecting to them, but as a matter of fact small fires produce no effect upon the large funds of the insurance companies.

6419. Sir *Andrew Lusk.*] Small fires are very useful, are they not, now and then?—It is possible that if there were no fires there might be no insurance, but I do not think that any of the insurance offices would discourage efforts for the extinction of fires upon so selfish a ground, as I may call it; I think there will always be fires enough; I never find any deficiency of them, and I think we never need anticipate any.

6420. Mr. *Onslow.*] As regards the change of these stations, do not you think they are as a whole in a better situation than they were in the year 1866?—I do not think they are for our special purposes. You see there are two very distinct interests; the one is the interest of the offices to guard themselves against enormous losses, and the other, the interest of the public to guard themselves against the loss of a single house and all its consequences. Now it is very easily understood that every man likes to have a fire-engine station in his own neighbourhood. It is true that when it was a question of its being paid out of the parish rate they did not provide the engine, or if they did, it was worth nothing, but still, while they have representatives at the Board who manage these

Mr. *C. W. Lovell.*

6 July 1876.

things, they will urge these matters upon their representatives. I live at Hampstead myself, and I like very well to see the fire engine near me, but I should object to my office paying anything for it, because I do not believe there is any chance of a fire in Hampstead which would justify it in keeping a station for itself. Still I like the feeling of it. They talk of a Shooter's-hill station. I doubt if there is a risk in Shooter's-hill that any office would not take at 1 *s.* 6 *d.* without a station, and they would not take it at less than 1 *s.* 6 *d.* with a station. I say, do not furnish us with that which is of so slight importance to us, if the effect of it is to deprive us of that which is of the utmost importance to us.

6421. I understand that you think there should be some representation of the insurance companies on the Metropolitan Board of Works, and you say that one representative would be of no use; what remedy would you suggest for that?—I am not one of those who think there ought to be a representation of the offices upon the Metropolitan Board of Works, because I cannot believe that it would be an effectual one. I think our interest and our views are so, I will not say antagonistic to the others, but so altogether outside of them; they are based upon such different grounds, that I do not think there would be any sympathy between the representatives of the offices and the others, but I must be understood in that as expressing my own feeling, and not the feeling of everybody, because there are managers of offices who are very strong in their desire for that, and think it is a proper thing. I only say do not ask me to be the representative, because I would not.

6422. But, considering that this year you will give 18,000*l.* towards the expenses of the Metropolitan Fire Brigade, which is a very large item, and that you are in no way represented, and supposing you continue this contribution, with the experience you have had, have you no means which you could suggest to the Committee for being represented in any way?—I do not view representation as being worth anything where it has no influence and no power.

6423. As regards the matter of the floats, you say that the Metropolitan Board of Works, in answer to your letter, pooh-poohed your recommendation; are you aware that they gave the subject their serious consideration, and that Captain Shaw made experiments and took the advice of their engineer officers before they answered your letter in what you call this pooh-poohing style?—You have got, I think, a printed copy of the letter, or report, which was sent on that occasion. What experiments may have been made I do not know, but it really seemed to the offices something, I was going to say laughable, that an engine, weighing, we will call it, two tons should require the same depth of water to float it as an engine weighing 120 tons, but this appeared to us to be assumed with regard to the large engine, which, by the way, has, I am told, been a very unfortunate speculation, because she is so strong that she never works without breaking herself, and spends more than half her time in the hospital for repairs. But the great engine makers, Messrs. Shand and Mason, and Merryweather, offered to contract for the construction of useful engines which should only draw 18 inches of water. It was represented to us from the Board that they were going to enlarge the hull of this large engine still more, so as to give her more flotation, and that they could only do it by increasing the size of her; there must be some limit to the size of the thing; it was altogether wide of our representation. Our request was that several small handy engines should be furnished, which should be able to run about and start at the first call and go to a fire, and just take it in hand till a more powerful one arrived.

6424. Still you are aware that that letter was sent after consultation with practical engineers upon the subject?—I am not aware of anything that was done upon the subject.

6425. You state that your contribution is used for other purposes than the protection of property. For what other purposes besides the placing of fire-escapes for the protection of life is it applied?—Perhaps I may be rather restricted in my views upon that subject, as my office is not a life office, and therefore we have no possible interest in the matter beyond the general view of humanity, but a calculation has been made that the life protection absorbs a fourth part of the offices' contributions. Now, if a fourth part of the offices' contribution is used for a purpose foreign to their interests altogether, I cannot see that they should be called upon to contribute over again. There may be some

other

other desirable object of contribution which they would like to adopt, and I do not know what they would stop at.

6426. Then, as I understand, the "other purposes" means the fire-escapes. Are there no other purposes?—I am not aware of other purposes. The Society for the Protection of Life from Fire used to be a separate society, as you are aware, but the Metropolitan Board of Works took that society over with all its obligations, and it has been worked very efficiently. I would distinctly be understood as saying that the offices make no complaint whatever of the manner in which the Metropolitan Board carry out the fire brigade through their staff; but that the offices think that as, from their experience, they do know something of fire extinction, a little more attention might be paid by the committee to their representations.

6427. Then, to sum up your experience, I may put it in this way: I hope I am not putting it too strongly. Your assertion is, that the Metropolitan Board of Works have not attended to any of the recommendations of the insurance companies, and, that being the case, the insurance companies do not see the propriety of making any further representations to the Metropolitan Board of Works?—I am not prepared to go the length of that last. It is not many weeks ago when it was suggested that I should write to the Board upon some other subject, and I said, "Oh, do spare me." I am the mouth-piece of the committee, and if the committee resolve that a certain communication is proper to be made, and they wish it made, I must sign my name to it; perhaps I may even write the letter.

6428. Was that upon any important subject?—I really forget what it was about.

6429. The insurance offices have not made any remonstrances, either slight or strong, against the removal of the head station from Watling-street, have they?—I am not aware that they have.

6430. Do you think that a serious matter?—I do not know enough of it to form an opinion. If they are going to retain it in its former strength, I do not think we should be justified in saying anything about it, but still it is difficult to avoid the feeling that a head station is under better management altogether than a subordinate one.

6431. And yet the insurance offices have made no move in the matter at all?—They have not to my knowledge.

6432. They did not ask the Metropolitan Board of Works what was going to be done?—It is as we understand a *fait accompli*; the thing is decided. We are never consulted as to whether we think such a thing would be advisable or not.

6433. Sir *Henry Peek.*] I understand you to state that prior to the year 1865 the extinction of fires in the metropolis was solely the duty, or rather was a matter for the fire insurance companies?—Except so far as parishes chose to supplement that by making use of their powers of furnishing themselves with engines, which I believe three or four did, namely, Paddington, Hackney, and one or two other parishes, which had very good and efficient brigades, but generally speaking there was a little useless engine, with some worn out old beadle to take charge of it. It was worth nothing at all. They practically relied upon the brigade of the offices.

6434. And such a thing as a fire-escape in the year 1865 was unknown?—There used to be fire-ladders; you used to see it put up at the churches. "Fire-ladders are kept at such a place;" but they were very inefficient implements as compared with fire-escapes I should imagine.

6435. We have evidence before the Committee that the fire-escape question was first considered in the year 1867; that is two years after the transfer of the fire brigade from the offices to the Metropolitan Board of Works?—It was a private society, formed by subscription, as any other benevolent society would be. They managed their own funds. Afterwards I do not know what the arrangement was, or the circumstances of it, but I remember the fact that their duties were taken over by the Metropolitan Board of Works, and they are not, certainly, conducted without expense.

6436. And you certainly think that if so great a departure from the bargain of 1865 were made in 1867, the fire insurance companies ought certainly to have had something to say in the matter?—They ought not, in the year 1876, to be further prejudiced by being called upon for more money, because the

Mr. *G. W. Lovell.*

6 July 1876.

money has been spent which was originally furnished. The general reply of the Board has been, "We have no more funds, and we cannot do anything more." We know very well that the outlying districts, which are altogether beyond the interests of the fire insurance companies, press to have stations there, and I dare say they may put on pressure till they obtain them. Then the money must be saved somewhere. Two of our old stations have been suppressed, and four others removed.

6437. I suppose you have read a good deal of the evidence which has been submitted to this Committee by members of the Fire Brigade Committee and others?—I had last night offered to me the whole packet of papers, and I took them home, but they were discouraging. I tried, and tried, and I found them highly interesting everywhere; so much so, that I could not leave the one bit of evidence I was upon, and I need not say that, in a single evening, I could not make any great progress; I therefore returned them to the gentleman who lent them to me, without much more knowledge of the matter than I had of it when I took it in hand.

6438. Would you allow me to read two questions put by the honourable Member for Linlithgowshire the other day at No. 5088. "*Q.* But some of these fire-brigade stations were removed from the parts where the valuable property of the City is to the suburbs, and still the insurance companies are called upon to pay their proportion of the expense? *A.* But the insurance companies are interested just as much in the property of the suburbs as they are in that of the central parts. If they insure 600,000,000 *l.* of property, probably a very much larger portion of that property would be in the suburbs than in the central parts of London." That evidence is given by Mr. Richardson who we understand is the Vice Chairman of the Works Committee?—I do not think he obtained that information from the fire-insurance offices, or that the offices would ever have given such information, because generally speaking as we know in the suburbs, they are moderate-sized houses, a large proportion of them being private houses: they are not great depôts of merchandise; those things are all centralised upon the two sides of the Thames, in what used to be London before the metropolis was enlarged.

6439. You would disagree *in toto* with that?—I do; indeed I am surprised at it, because upon what it is founded I cannot tell at all.

6440. I suppose you would also disagree with this, which was another question put by the honourable Member for Linlithgowshire. *Q.* "But will not you answer my question; do not the insurance companies know their own business a great deal better than the Metropolitan Board of Works can do? *A.* No, I say they cannot"?—I am not the person who ought to give an opinion upon that, because I may believe myself to know more about my own business than an outsider does, but I cannot expect to convince him if he starts with the other belief.

6441. But still if those be the views of the leading men of the Metropolitan Board of Works who have been brought here to give evidence, it is not very likely that the insurance companies would have the fullest consideration at the hands of the committee?—I would never charge the committee unjustifiably with anything, but if they adopt such foregone conclusions as that I can only hold that they are very greatly in error, and that they begin by a misapprehension of the object with which the offices formed the brigade. They formed the brigade and placed the stations as protection against gigantic fires; to put a limit to fires. When you come into the suburbs among the 600,000,000 *l.* there may be a large proportionate value of the property in detached houses and gardens, but these are not a subject which would affect the funds of any fire office if half a dozen of those houses were to be burnt down every day for a week. But if you have a single fire on one of the great wharves like that in Tooley-street, which burnt four wharves, our own loss in which was 130,000 *l.*, that is a very different thing from having a 500 *l.* or 1,000 *l.* house burnt down.

6442. Do not the insurance companies feel that they are not properly used by being voiceless in this matter?—Some of them do, but as I have said, my own personal feeling is that I have no desire for a voice which I cannot believe would have any influence.

6443. But if I understand it aright the insurance companies during 11 years have found 167,000 *l.* as against the Board's 426,000 *l.* If you could have representation in that proportion you would think representation a very great advantage

advantage upon the Metropolitan Board of Works Councils, would you not?—*Primâ facie* it would appear so, but it is a sort of thing which would require a good deal of thinking about, and a good deal of consulting with other people, whose opinions would be quite as valuable as any of my own.

6444. Is it not the fact that, in consequence of the increased distribution of stations, the protection to districts within the great centres of London has been diminished, rather than increased, since the Metropolitan Board of Works took over the brigade?—Two stations have been abrogated, and two others removed.

6445. And you say the protection of the fire insurance companies' interests is less now than it was 10 or 15 years ago?—It is self-evident from that fact; viewing what the interests they desire to protect are, that is to say, the limitation of fires within moderate bounds, so that they shall not involve ruinous losses. If you take another view of the matter and count buildings, instead of estimating the value of the property, you may be able to show a great number of houses which are now protected, but they are not houses whose destruction would affect, or sensibly affect, the fire insurance offices. What they desire to do is, to guard themselves against Tooley-street fires, and things of that sort, and to have powerful engines so near the spot that they can arrive very early. There has been, on some occasions, a great deal of time consumed, I do not say unjustifiably (I am not for a moment charging any fault), but a long time had elapsed; for example, three-quarters of an hour upon the occasion of the King and Queen Granary fire before the first of the floats arrived; during that three-quarters of an hour the place was all alight. In fact, the fire did not begin at the granary. It began at a place next to the granary, and spread from there to the granary. The water service is notoriously bad all along both sides of the river, so much so that the offices charge a higher scale of rates all along the river side. You cannot call it a residential district; it is a warehouse district, and most of the people prefer dipping their pails into the river, and getting what they want, to paying any rate. The water company would be willing to lay down pipes of any bore from which they could see their way to a remunerative income, but it is not a neighbourhood which is willing to pay for the consumption of water; therefore the mains are very small, and the service very little, while the property is stored in very great masses. For that reason, as long as I can remember, we have always charged a higher rate for the property at the sides of the river than elsewhere, namely, that the water supply is so insufficient.

6446. I suppose that made the insurance companies so very anxious that the question of floats should have extra consideration?—To whatever circumstances it might be due, it was very late before the arrival of the floats at the King and Queen Granary fire, which made the offices very sensitive upon the subject, and the offices then began to desire that there should be a number of small floating engines to be a sort of frigates and gun boats, as I remember describing them, of the brigade, and not delay action till the first-rate men-of-war could be brought to the spot, but that they should be handy little things, drawing very little water, could get about anywhere, and which, being light, could be started very rapidly indeed, and could take a fire in hand until the great engines came up.

6447. And those representations of yours about the floats, in the opinion of the fire insurance companies, did not receive that attention which they ought to have received?—I cannot say they did not receive that attention they ought to have received, because I was not present, but they received no encouragement and no adoption. I was one of the deputation which waited upon the Board on that occasion. The first question was, how much are the offices prepared to contribute. I told them nothing at all, for we considered we had contributed too much already. Then it was explained that they had not got the money; that they had raised all the money they were entitled to raise; and that it was all spent, and that they had no further funds to supply them with.

6448. Do the fire insurance offices, out of their own pockets over and above the contribution to the Metropolitan Board of Works, keep up the Salvage Corps?—Yes, but that they hope will be self-paying, because when the brigade belonged to the fire insurance offices, the firemen were their servants, and it was the duty of the firemen to protect the property as well as to extinguish the fire. When it passed into the hands of a different body who had no duty to perform

Mr. *G. W. Lovell.*

6 July 1876.

perform but the extinction of the fire, the property became derelict as such, and we decided that we must have people to look after that, and that if the brigade, having extinguished the fire, went away, as they would be justified in doing, our property would be subjected to any amount of pillage; and also that if the brigade limited their efforts to the simple duty of the extinction of fire, they might do a great deal of harm to property in the course of extinguishing it. Therefore we formed a Salvage Corps whose business should have nothing to do with the extinction of fire, but only the protection of property; they are provided with a large amount of waterproof cloths for the protection of goods from the water coming through the floors; and if they judge, having generally been firemen, that it will be burnt, they proceed to remove the property.

6449. But that Salvage Corps was established after the transfer of the brigade, was it not?—Yes, and in consequence of it. It was because the men of the brigade were no longer our servants, and were not bound to give any attention to the property. Their duty, as defined by the Act, is to extinguish all fires; and as they would be quite fulfilling their duty if, without regard to the fate of the property, they put the fire out in the shortest time, the offices felt that the property itself required a great deal of care and attention, both to protect it from damage at the time of the fire, and from subsequent robbery, and they felt themselves obliged to establish a Salvage Corps. The Salvage Corps has this peculiarity about it, that it is quite optional with offices whether they join it or not. Those who do join it pay only in proportion to the services they receive. It is not a fixed payment of which each has to take its share, but if a quarter passes in which an office, a member of the corps, has received no service from the corps, there is no assessment upon that company for that period.

6450. Do the insurance companies make any direct contribution to the fire brigades of Manchester and Liverpool?—Yes, they do contribute directly, but it is done through the Liverpool Salvage Corps, upon which the offices are represented, and I do not know what is the arrangement there. I know our agent who represents us sends us an account, and asks for leave to pay so much, which we grant him. At Manchester it is a fixed sum. I think it is 2,500 *l.* a year which the offices contribute in certain agreed portions, and the Corporation of Manchester undertake to provide extinguishing apparatus for all the fires within the borough, but they do not go outside the borough. The matter is still under negociation as to what is to be done with the districts lying outside the borough; some of them have very good engine provision, some of them have not. That question still remains to negociate.

6451. There is only one more question I will ask you; from your great experience of fires in the metropolis, do you think the old practice of having inquests on fires should be re-established?—I think it might be a considerable check upon fraud to know that there would be an inquiry, but if the inquiry is to be into every fire which occurs, considering, I should think, upon the average, that we have six or seven fires every night, it would be an awful expense. If it is only to be in certain special cases, then it would be a great grievance, for a man would immediately say, "I am suspected," if there is to be an inquest held upon his fire, and not upon everybody's. If it is to be upon every fire, I do not see where there is to be an end of the expense.

6452. Mr. *Hankey.*] I wish to ask you whether you know any instance in any town in Great Britain where insurance offices are compelled to contribute to the expense of a fire brigade by statute?—No, I do not.

6453. Except in London?—Except in London, and also excepting the arrangement which has been made in Manchester.

6454. Is that by statute?—I do not know whether it has been introduced with the Manchester Local Act.

6455. Mr. *Stewart Hardy.*] Could you let the Committee know approximately the amount of loss in London every year by fire?—Not at all; the fire statistics are so entirely beyond all rule, and so irregular, that one year does not the least in the world represent another.

6456. If you could get at it approximately for the last 10 years it would be of use to the Committee?—We could get at our London loss account, and so I dare say could any other office, but I could not the least in the world help you with the loss account of other companies.

6457. Would Mr. Tomkinson, who is the chairman of the associated companies, be able to answer more directly upon that point than you can?—I do not see

see how he could, because certainly we have never furnished Mr. Tomkinson with the amount of our losses, which would represent a handsome figure, especially if you include the Tooley-street fire.

6458. Could you and Mr. Tomkinson manage to give the Committee the losses for 10 years of your own offices, and then we might perhaps gather from that a general opinion of the result of other companies?—I am afraid it would mislead you, and I am afraid it would do no good either. I have referred to the King and Queen Granary fire having cost 200,000 *l.* to some offices. It did not cost our office a penny; so that the experience of one office would furnish no criterion of the experience of others.

6459. All these things go by averages?—Our averages would require to be taken over a very long period. I do not think you could have a fair average over less than 20 years. Then when you have got to the end of the time, the circumstances are probably changed.

6460. As far as I understand you, you object to one-fourth of the expenses of the fire brigade being now applied for the purpose of saving life?—I do not object to it the least in the world, if we had not to furnish it.

6461. You consider it unfair that one-fourth of your contribution should be used in life-saving apparatus and men?—When there is any contemplation of charging us still more, I doubly feel its unfairness; because if we are told that the amount collected is insufficient, we say that amount was furnished for fire-extinction purposes. If other purposes are required to be added, I protest against their being taken out of our money, because our money would be sufficient, probably, if applied to the purposes for which it was raised.

6462. Have you heard Captain Shaw state that the fire-escapes are considered valuable as an assistance in putting out fires, and that that is one of their most valuable purposes?—I know they use fire-escapes for raising the hose occasionally, but we used to do the same thing by ladders or staircases. I think the collateral benefit they afford is infinitesimal.

6463. It does not at all represent your one-fourth?—It does not.

6464. Sir *Andrew Lusk.*] Do you think there is a deficiency of protection for London under the fire brigade?—That is a difficult question to answer, because it depends upon whether it is from my point of view or from another's. I really believe that the protection afforded in the outskirts is superabundant. I think it is a wasteful amount of protection to have large stations where there are only small houses and small risks. Where you have these great accumulations of property, which you have all along both sides of the river, and in all the streets out of Cheapside, and in Cheapside itself, and so forth, I do not think we can be too much protected.

6465. Are you aware that it is one of the objects of our Committee to inquire into that very thing?—Yes.

6466. Do you think that outside of what is called London proper there is what may be called ample protection?—Yes.

6467. And you think it rather defective citywards?—When you find the two stations which the offices thought desirable, have been abrogated, it either follows that the protection desired by the offices has been diminished, or that the offices did not know what they were about when they established those stations and went to the expense of retaining them.

6468. Are you aware that it has been hinted here several times by witnesses that the insurance offices ought to pay more than they do at present?—I have heard it talked of, but that rather reminds one of that remark of Sidney Smith's: A. sees B. in distress, and asks C. to relieve him; and when there is money to be raised there will always be those found who will suggest that others should raise it.

6469. The rate at present raised is a halfpenny in the pound?—And the rate the offices pay is about 5 *d.* in the pound. They already pay ten times the amount of the public as a ratio.

6470. Looking at it from a logical point of view, do you see any reason why an insurance office ought to pay anything at all?—I am bound to say I do not, because the general rule of the world is that they do not pay such, and it is recognised as a municipal duty to protect the society of the place.

6471. A gentleman who gave evidence before this Committee held that the property was the property of the insurance companies and not of the owner; what do you say to that proposition?—I deny it. I suppose the uninsured property

Mr. *G. W. Lovell.*

6 July 1876.

he would admit to be the property of the owner, at all events, and that is a very large portion, especially, for instance, if you take a nobleman's mansion, in which you might find an insurance of 30,000 *l.* and the property worth 300,000 *l.* If we could have a universal average clause which should compel everybody to insure the whole of his property or only to receive a corresponding indemnity in case of fire, we should have a much more calculable interest in the subject, but we should share that in common with the owner of the uninsured part.

6472. You do not insure property because it is your property. You only indemnify the owner in case of fire?—So little does the property belong to the office, that we have a special condition to give us access to it without being trespassers.

6473. The company insuring a quantity of tea, the title to the tea still remains in the hands of the owner of the tea?—All the office undertakes to do is to hold the owner free from loss, as far as the conditions of his policy and the sum he assures in permit.

6474. In short, you indemnify him against loss, and the property is his; when it ceases to exist you pay for it?—Yes, that is so; but that is only because he has lost it.

6475. Therefore it is not your property, but you simply indemnify him if he loses?—Quite so. It is a contract of indemnity for the loss he may sustain; it is not a contract to whoever may be the loser; it is a contract to A. B., who takes out the policy; the policy declares that he cannot assign it at his own option; the office must agree to that.

6476. The office contributing so large a portion as they do, do you not think they ought to be represented upon the Board as a matter of policy?—If the representation were a real one; if it were one which should have such an influence as to give them really a voice in its management, I should think it a very proper thing indeed; but if the representation were merely a nominal one, namely, to have a single voice there with which no other voice was in sympathy, I do not think it would be worth anything.

6477. Take the Board of Trade; the shipowners are represented, and the wharfingers and the public are represented; none of them have many representatives, but altogether combined they form a Board of 24 or 30 gentlemen. Now if the insurance companies had two or three, and the Government had one, how do you say that would be as a matter of policy?—I do not know how many the committee consist of, but I am afraid our representatives would be in a very small minority.

6478. Do not you think that minorities are useful, even in the House of Commons sometimes?—I think a minority which could exercise no influence would be mischievous to the party which should be represented by that minority, because they would have neither a grievance nor a remedy. They would be deprived of their grievance; they would be said to be represented.

6479. But by sound arguments such as yours, you might turn the minority into a majority?—It is a very rare thing to find an argument that will have much effect on a pocket consideration.

Monday, 10*th July* 1876.

MEMBERS PRESENT:

Mr. Clifton.	Mr. Locke.
Mr. Forsyth.	Mr. M'Lagan.
Mr. Hankey.	Mr. Onslow.
Mr. Hardcastle.	Sir Henry Peek.
Mr. John Stewart Hardy.	Mr. Ritchie.
Mr. Hayter.	Mr. Young.
Sir James Hogg.	

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

Mr. *George William Lovell*, re-called; and further Examined.

Mr. *G. W. Lovell.*
10 July 1876.

6480. *Chairman.*] ARE there any corrections you would like to make before we commence any fresh matter?—There was one inquiry made on the last occasion of which I do not appear to have apprehended the meaning at all. It is with regard to a theory about property insured belonging to the insurance offices. I had never heard that theory broached before, and I did not take it in until I had read the evidence in print. I refer to Questions and Answers Nos. 6471 and 6472: "*Q.* A gentleman who gave evidence before this Committee held that the property was the property of the insurance companies, and not of the owners;" and the next Question is: "You do not insure property because it is your property; you only indemnify the owner in case of fire?" I had gone into some question about the nature of insurance which I should be glad to be allowed to withdraw altogether; for it was an unadvised thing to compare it with a wager, but the answer, I think, should be: "So little does the property belong to the offices, that the offices have considered it necessary to introduce a special condition even to give them access to the property without being exposed to an action for trespass." I have known more than one case of this kind, where a man has made an unreasonable claim for a building, and the fire insurance offices determined to reinstate it, and he has refused to admit the workmen upon the premises. The condition I speak of is this: "On the happening of any loss or damage by fire to any property in respect of which a claim is or may be made under this policy, the company, without being deemed a wrongdoer, may, by its authorised officer and servants, enter into the building, or place in which such loss or damage has happened, and for a reasonable time remain in possession thereof, and of any property hereby insured which is contained therein, for all reasonable purposes relating to or in connection with the insurance." That clause was introduced some years ago, when the conditions of policies were revised. Occasionally there turned up a very awkward thing, that we could not get possession of the salvage, nor could restore the property, on account of access being forbidden to us, and our being threatened with an action for trespass.

6481. That explanation you would wish recorded as against your answer to Question No. 6472?—Yes; I would ask, at the same time, to be permitted to withdraw the answer which is there given with regard to insurance being a wager. Now, in a certain sense, I consider that to be true, but now and then we find people who consider insurance as a lottery and the policy as their lottery ticket, and the occurrence of a fire is drawing a prize, and that nothing remains to do but to pay them. This would rather fortify that position by saying that the man has won his wager. I should be glad to be allowed to withdraw

Mr. *G. W. Lovell.*

10 July 1876.

draw that, and to substitute the explanation that the property does not belong to the offices, and that they have been obliged to make it a condition of their policy that they should have access to it.

6482. Is there anything else which you wish to correct?—I do not think there is anything else.

6483. Mr. *M'Lagan.*] As I understand the answers given to the questions upon the last occasion by you, you are of opinion that the offices on principle ought not to pay any part of the contribution towards the support of the fire brigade?—I do not think they ought on principle.

6484. And further, that though they ought to have a representative, you do not think that a representative would be much use at the Board?—I must limit that to my own feeling, because there are people who feel very differently.

6485. Are you aware whether any objection was taken by the fire insurance offices at the transference of the engines and the other fire-protection appliances in 1866 to their paying this contribution?—I was not upon the committee which managed the transfer, so I cannot speak with any certainty upon that point, but the matter was in negociation for a length of time; the first idea of the insurance offices was, that the police should take charge of the fire brigade, but the Government preferred to put it into the hands of the Metropolitan Board of Works, and it was eventually handed over to them. I myself had a strong feeling at the time that they were in an unfortunate position for representing our interests, because they were really the representatives of interests which had nothing to do with our special purpose, our special purpose being the limitation of the range of fires, whereas the object of the representation by the Metropolitan Board of Works must be understood to be the protection of all the metropolis alike.

6486. But there was no objection taken by the offices to the payment of the contribution?—I think there was no objection taken. I think it was arranged at 35 *l.* per million as representing about 10,000 *l.* a year, and that the Government were to pay 10,000 *l.* a year, and that the fire insurance offices would pay 10,000 *l.*, or more than that, if their business increased; that was the arrangement, and that 10,000 *l.* has now grown into 20,000 *l.*, because the fire insurance offices have got so much more business.

6487. But there is a strong opinion now however, is there not, that the fire insurance offices should not pay that contribution?—I do not think I may go so far as to say there is a strong opinion that the fire insurance offices should not pay that contribution, or that they should not continue to pay the contribution that they agreed for if they get value for it. But as regards their contribution being increased, there is a very strong feeling with them that if the money paid by them were devoted to the use it was subscribed for, and fair economy used in the outlay of it, it would be sufficient to secure all the protection their special interests require.

6488. I understand that the fire insurance offices, though they do not object to pay this contribution, still think it is wrong in principle?—That it is wrong in principle may be taken for granted, if you find all the rest of the world going the other way, and that no other places pay this charge. They have not upon any occasion objected to pay the 35 *l.* per million, but they do very strongly object to an increase of it, and they think that if there is any proposal to increase the ratio of their payment the whole subject ought to be revised.

6489. There is no doubt, however, that the fire offices thought it was for their interest to keep up a fire brigade in London before the present fire brigade was in existence?—Yes, they thought it for their interest, but it should be distinctly understood that it was looking only to the checking of very extensive fires; that they did not establish stations in the more remote parts of the metropolis, nor in the country.

6490. But although it was considered that it was to their interest, they thought it was the duty or the business of the municipal or Imperial authority to protect property and life from fire, and not the business or the duty of the fire insurance offices to do so?—Exactly so; that the business of the offices was simply to limit the losses of their own trade.

6491. And in handing over, as you did, the fire-protection appliances, and agreeing

agreeing to contribute 35 *l.* per million, you did so upon the understanding that a sufficient fire brigade was to be kept up in the City to check any extensive fires there?—I endeavoured myself very strongly to get a clause introduced that all the existing stations should be retained, and that they should be retained in their existing force; that is to say, with the same number of engines and men in them, but we could not succeed in that object. I believe there was a direct motion made in the House of Commons to that effect, but it was negatived, and we were told that we must trust, as a matter of course, to the body charged with this duty carrying out their duty properly, and must put an honourable confidence in them.

6492. So far as the business of the office is concerned, it is a matter of indifference to them whether they have fires or not; their business is to try and get a profit; if there are destructive fires to increase the rates, and if there are not destructive fires to reduce the rates?—Yes, but there are so many limitations to all those things.

6493. But I should like to get it generally?—As a general rule, after the great fire in Tooley-street the offices very largely increased the rates, and they took at the same time steps for the reduction of the rates again, when satisfactory structural improvements should be made in the buildings, or when the goods should be properly classified, and not everything mixed together. That very move of theirs led to the construction of two large new offices, who, perhaps, trusted to the improvements which would be carried out upon the requisition of the others, and did not adopt the high premiums of the others at the time.

6494. And upon that increase of the premiums, who are the sufferers?—It begins with the very certain suffering of the office, and the recouping of that will depend upon how much business they get in the future, and at what rates.

6495. But who pays the increased premiums?—The assured.

6496. Therefore, the public are the sufferers by not having a sufficient protection for life and property against fire?—A certain class of the public, say, in mercantile warehouses, the merchants and the wharfingers; I cannot suppose that the private inhabitants of London living in the outskirts suffer at all from an increase in the mercantile rates.

6497. Generally speaking, however, the public are the sufferers?—In that sense the public interested in the matter are.

6498. Therefore if the public are the sufferers, it is the duty of those who represent the public, namely, the municipal authorities, or the Imperial authorities, to prevent fire as much as possible?—I should imagine so, but I should hesitate at laying down their duties.

6499. Therefore the payment for the keeping up of the appliances for the protection of life and property from fire should be made by the municipal authorities, and not by the offices?—On principle, I think so.

6500. When the insurance companies handed over their engines and other appliances to the Metropolitan Board of Works they agreed to pay that 35 *l.* per 1,000,000 *l.* for a certain reason, as I understand?—Yes, as a compromise for what they had paid before; the fact was, a good many of the offices got tired of the continual growing increase of the brigade, and they pleaded that they had not any sufficient interests in the parts of London where the force of the brigade was applied; they pleaded that they had principally country risks, and altogether so many expressed their determination to retire from the brigade, that it became necessary, in a certain sense, to wind the matter up; in fact, to pass it on to another authority. There was a very general feeling that the offices undertook the protection of London, which they always insisted they did not, but that their brigade was solely for their own purposes.

6501. But I understand that one reason which made them agree to this contribution was, that there was a very large amount of property in the City of London that the rates could not reach, and that it was the interest of the companies to have that property protected from fire; I refer principally to the contents of the warehouses?—I doubt very much whether the fire insurance offices ever went so deeply into the theory of the matter as that; they were at a very large expense, which was a growing expense, and they desired to limit that. They insisted that they were not bound to protect the uninsured people, nor (that is to say, that it would not pay them as a business measure) to protect the outlying parts of London, and at last secured attention by saying that upon a

Mr. *G. W. Lovell.*
10 July 1876.

given day they should put down their engines; their idea was to transfer the duty to the police. However, the police were not thought the fittest body, and it was handed over to the Metropolitan Board of Works instead.

6502 Can you tell the Committee any instance in the kingdom (I will not limit my question to London) where, either by a reduction of the rate of premium, or by an increase in the rate of premium, the public were benefited? I put that question mainly with regard to a question that was put on the last occasion by the honourable Member for the Tower Hamlets: "Do you contend that the more secure you make property, and the more you reduce the losses of the insurance companies, the more the premiums will decline." Now do you know any instances which you can give in reply to that question, where the losses of the insurance companies were reduced, and where immediately afterwards the companies reduced the premiums?—Yes, I can give instances of that kind. Take Liverpool, which is a very striking instance of that. The fires at Liverpool were frightfully frequent and destructive, and the consequence was that the fire insurance offices, not merely as an indemnity for their losses, but as an inducement to compel the warehouse owners of Liverpool to improve the structure of their buildings, raised the rate very much indeed, with the promise that as soon as the structural improvements were made they would reduce the rate. Those improvements are made, and the better warehouses at Liverpool have now no external woodwork at all. The woodwork has been replaced by iron, and the rate which was formerly 35*s.* per cent. is now reduced to 5*s.* or 6*s.*, because the risk is so much reduced. All those warehouses which are so improved are regularly certified; they receive a certificate with a number, and the commonest form of policy in Liverpool is "Merchandise in all or any of the certified warehouses."

6503. That is just an instance of the public being as much interested in having proper fire protection and appliances as the offices are, and perhaps even more so than the offices?—Always restricting the sense of the word "public" to the parties interested in the trade. For example, in London, afte rthe fire in Tooley-street, the rates were very much raised for the public wharves, and the proprietors were told that if they would make structural improvements to the satisfaction of the surveyor of the offices, and would consent to classify their goods to a certain extent, their premiums should then be immediately reduced. A great deal was done in the way of improvement, and the premiums were immediately reduced from the day of surveyors' certificates. But I was going to say, as regards the use of the term "public," it did not make a farthing's difference to me as a member of the public. It was nothing affecting the public as a body, but only that section of the public interested in that special business.

6504. You alluded to Liverpool, and the great advantage there was in having a proper inspection of warehouses. Can you inform the Committee who inspects these warehouses?—We leave it to the Liverpool Salvage Corps, and although we have a representative on that body, I am not familiar with the details of its duties. When a Liverpool warehouse has been inspected, and is admitted to be a warehouse entitled to a certificate, a certificate is granted to it; it is registered, and then comes within the class of certified warehouses. If they do something which is very objectionable in that warehouse, the offices tell them that they must withdraw the certificate. If they still persist, then it is advertised, I believe, in the newspapers that the certificate of warehouse No. So-and-so is withdrawn.

6505. Is there only one inspector for all the offices, or are there more than one?—I am not able to say; the working of the matter is entirely out of my personal knowledge.

6506. With respect to the inspection of warehouses in Liverpool, do you remember the fact of certain policemen being appointed to search the men on going to their work, to find out whether they had any pipes or cigars about them, or any rule of that kind?—I do not remember it. I think it must have been before I was secretary. If it was before the year 1850, it would have been.

6507. It must have been about the year 1865 or 1866?—I have no recollection of it. The fact is, that all these things are worked by committees, and this would go rather to the northern committee of what may be called the local offices; that is to say, the offices with their head-quarters in the northern district are represented, and it is assumed that they know best the details of the business

business within their own district, and we ordinarily defer much to what they recommend.

6508. You do not know that the fact of placing these two policemen as inspectors had the effect of largely reducing the number of fires in warehouses?—I do not know that it had that effect. The number of fires in Liverpool has been largely reduced; there is no question of that; but one or two years ago they had a wonderful run of fires at Liverpool; but the very extensive fires, such as the Goree warehouse fire and others, which burnt down an entire street of warehouses, have ceased altogether since the warehouses have been improved.

6509. Do you agree with the statement that those who insure their property when the rates are high, and at the same time when the insurance companies pay for the keeping up of the fire-protection appliances, actually pay for the protection of the houses of those who are not insured?—I am afraid it is rather out of my depth; that I am not theorist sufficient to answer that question. In matters of insurance, whether of fire or life, it is the living who always pay for the dead. The fire insurance office is merely the medium of communication; it receives a certain amount of money, and for that consideration it agrees to make good a certain amount of loss; but I should be afraid to trust myself at all to go into the politico-economical theory of where the money came from and where it goes to. I only know that when losses are very heavy with one class of risk, you want some more premium; and if there is a decided improvement we should be equally ready to reduce the premium.

6510. You are not prepared to contend that the present rate of contribution paid by the fire insurance offices should be abolished?—I do not know that anybody has gone so far as to recommend that.

6511. I think you stated that?—I stated that in theory it was inconsistent with the practice of all the rest of the world, but when we have gone on so many years paying it, and are satisfied to pay it as long as we get some attention to our representations, and get special protection from it, it would be going too far for me individually to say that I think the fire insurance offices would desire to be relieved from it altogether. I said this, that if a large proportion of the contribution is diverted to other purposes I thought the assessment of the offices ought to be reduced accordingly.

6512. Then your meaning is as I gather from your evidence, that a large proportion of the contribution has been diverted, and that, therefore, there ought to be a reduction of the contribution?—There has been a large diversion, and an equivalent might be given by an extension of the means for protecting the offices, but the fact is that the power of doing so has been contracted. Two stations have been abolished, one in Soho, another in Whitechapel. The Southwark Bridge-road station was removed, the Whitechapel one abolished; and another, when it was in a valuable position, has been removed to a place from where the engines would be so much longer in coming, and the call so much longer in reaching it.

6513. But you think that the fire insurance offices would be content to pay what they are now paying if the stations which have been removed were replaced?—And the proper amount of attention paid to their views, because the fire insurance offices certainly hold that they know a good deal about their own business. At all events the fire insurance offices have paid enough to have bought knowledge. If they have got nothing for their money they have made a very wasteful expenditure.

6514. As regards representation upon the Metropolitan Board of Works, do you not think that the fire insurance offices would have their recommendations and their remonstrances more listened to if they had some one sitting upon the Fire Protection Committee of the Metropolitan Board of Works, than if they had not?—My own personal opinion is that the circumstances would prevent a representative of the offices exercising any influence, because the members of the Metropolitan Board of Works represent the interest of the general outlying parishes. The fire insurance offices are not afraid of the extent of a fire in those parishes. There is a great deal more than mere masses of property to protect. The parishes apply for stations there, and of course the fire insurance offices have no possible objection to their having as many stations as they like, but they say, do not pinch them off from ours. We have an interest entirely distinct

Mr. *G. W. Lovell.* 10 July 1876.

distinct from theirs. They want a general protection; we want a special protection.

6515. You are Chairman, I believe, of the Salvage Corps Committee?—Yes.

6516. And your officer there is Mr. Swanton, the superintendent?—Yes.

6517. I understand that Captain Shaw is allowed to be present at all the meetings of the Fire Protection Committee of the Metropolitan Board of Works; do not you think that it would be of advantage to the offices if your superintendent had also the right to be present?—I have never really given a thought to that; our superintendent is always present at our meetings, as Captain Shaw is at his. I do not know whether the Salvage Corps would think it desirable to have Captain Shaw at all their meetings.

6518. That is quite a different thing?—It is only the other side of the same thing.

6519. While you are contributing to the support of the Fire Protection Committee, the Metropolitan Board of Works are not contributing to your Salvage Corps?—There is that difference.

6520. There is that distinct difference?—Yes. In reply to your question, I should say that I have never given the matter a moment's consideration.

6521. Mr. *Forsyth.*] Has a committee been formed to represent the different fire insurance offices of London, with regard to this inquiry?—An Evidence Committee, as they call it, of four gentlemen has been requested to consider what evidence we should tender to this Committee.

6522. Will you answer the question as shortly as possible, yes or no?—I may say, yes.

6523. Does that committee represent all the fire insurance offices?—Those offices which are associated together for their common interest are spread all over the country, and therefore it is not an easy thing to get a meeting of them; the offices forming the London Salvage Corps are more localised in London, and can meet with less difficulty, and therefore the general body of the offices passed a vote requesting the Salvage Corps to take up this subject.

6524. With regard to our Committee?—With regard to your Committee.

6525. Now can you say that some of the fire insurance offices are not in favour of an increase of their contribution to the funds of the Metropolitan Board of Works?—Most unquestionably I can say that.

6526. I have heard to the contrary?—I never heard of any who were in favour of increasing the contribution, but that many are greatly opposed to it I can answer without hesitation.

6527. Your impression is that they all are?—Yes.

6528. Can you give me the number of the committee of the Metropolitan Fire Brigade?—I understand it is 15.

6529. With regard to representation, how many fire insurance offices are there in London?—Do you refer to the offices belonging to the Salvage Corps?

6530. I meant the fire offices in London?—It is impossible to answer the question with the strictness you desire, because a fire office in Liverpool has its branch in London, and a fire office in Manchester has its branch in London.

6531. Will you give it as nearly as you can?—I was going to do so when I spoke of the offices forming the Salvage Corps, which are something over 40.

6532. The number of the Fire Brigade Committee being 15 only, supposing that the fire insurance offices in London had three or four representatives upon the Metropolitan Board of Works, would not that be a very fair proportion whose number would be sufficiently great to secure attention, and have their interests represented?—It would appear so, but how the thing would work I do not know; I have my own opinion, but that is only a private opinion, that where people's interests are so wide apart you are not likely upon mere argument to come to an agreement, but there are offices who strongly desire representation.

6533. There are 15 members on the committee, and if you had four representatives of the fire insurance offices that would be a fifth or a third, as the

the case might be, of the whole body?—It would appear to be a large concession.

6534. Supposing that there was no public body in London charged with the duty of protecting London from fire, would it not be the direct interest of the fire insurance offices themselves to establish and continue a fire brigade?—That is exactly what they did when such were the circumstances.

6535. Will you kindly say, yes or no?—Then I must answer your question in the affirmative. Would it not be desirable for the offices to establish a brigade for their own use, to which I say, yes.

6536. Would it not be their interest to do so?—Yes.

6537. If there were no public body in London charged with the duty of protecting London from fire, do not you think that the fire insurance offices would at once establish a brigade at their own cost?—Yes; they did it formerly, but they refused to establish stations at distant points; they did not establish this brigade for the purpose of checking small fires.

6538. With regard to those parts of the town where the property is considerable and the danger of fire great, the fire insurance offices would maintain a fire brigade of their own for purposes of that kind?—Certainly.

6539. I am led to understand that the contributions to the fire brigade are that the rates amount to 48,000 *l.*, and the contribution of the fire insurance offices to 18,000 *l.*?—It is nearly 19,000 *l.* now.

6540. Supposing the representation of the fire insurance offices was in the proportion of 19 to 48, that would give the fire insurance offices a considerable representation, would it not?—Yes; I am afraid a much more considerable proportion than the Metropolitan Board of Works would be willing to consent to.

6541. Would not that be a satisfactory representation?—That is asking me to answer for other people.

6542. As I understand your reasoning, it was this; that the representation would be so small, and the interests so diverse, that your interests would not be attended to; if you increase the representation upon the part of the fire offices, their influence would of course be so much greater, would it not?—The subject is not so simple as it appears; I believe that under the Metropolitan Board of Works there is a special committee for fire brigade purposes; I expect that the proceedings of the committee only result in recommendations to the general committee, and that the general committee adopt them or not as they please; now probably there would be important objections to our being represented upon the general committee, even if representations were given to us upon the sub-committee.

6543. Mr. *Hankey.*] I understood you to state that you considered that the interest of the Metropolitan Board of Works and the fire insurance offices were not by any means identical, because the fire insurance offices only desired to put out fires where insurances had been effected, but that the Metropolitan Board of Works had a duty to perform to protect the metropolis, whether insured or not?—I was not quite so selfish as that.

6544. Is that not your opinion?—That is not a purpose for which the fire insurance offices would raise a large sum of money annually. If a fire happens at the docks, where there is an indefinite number of millions worth of property at stake, they are very anxious indeed for its immediate extinction, or its extinction with all the rapidity possible; or if a fire happens at a wharf, in the same manner. What they look to is where large masses of property are accumulated, and where a destruction by fire would involve a very serious loss indeed.

6545. But small fires are rather beneficial to insurance offices than otherwise, are they not?—I would rather not say whether they were or were not; but I would say that we do not desire small fires.

6546. Sir *James Hogg.*] I believe you expressed the opinion that the protection of London from fire is the duty of the municipal authority?—Yes, I did.

6547. If that be so, I suppose you would admit that the duty extends to every part of the area under their jurisdiction?—Unquestionably.

6548. As the Metropolitan Board of Works derives the bulk of its funds

Mr. *G. W. Lovell.*

10 July 1876.

from the contributions of the ratepayers, has it not to provide for the protection of those ratepayers wherever their houses or property may be situate?—I have never said a word against that.

6549. You quite agree that it should be done?—Yes.

6550. But as I understood from your examination upon the last day, you rather objected to a station being placed at Shooter's Hill?—So far from objecting to it, I said I thought it was for the inhabitants of Shooter's Hill a very proper thing, and I instanced Hampstead, where I reside myself; but I do not think our office ought to pay for that, because there is nothing there which would justify a contribution on their part.

6551. Will you explain what you mean by your office paying, because you contribute to the municipal authority, and the municipal authority exercises its discretion with regard to spreading it over the metropolis; how then can you say that your office ought not to be bound to pay for the station at Shooter's Hill?—The contribution from the fire insurance offices was an agreed arrangement to diminish their amount of expense, which has now run up to what it was before, but they contributed in regard to what was their interest, namely, in furnishing protection where there were enormous accumulations of property.

6552. Can you point out to me any place in which it was specially stated, when the brigade was handed over to the Board, that there should be a larger amount of stations kept in one part of London than in the others?—I cannot answer that question, because I was not a party to the arrangement.

6553. You do not know anything about it?—No further than I am told.

6554. Can you point out any specification of the sort, or any suggestion?—I believed that it was most fully understood.

6555. You cannot point out to me where it was in writing?—I must refer you to other people who had more to do with the arrangement.

6556. Then I must take your answer as being that you do not know anything about it?—I do not know anything about it in that way.

6557. Do you think that the Metropolitan Board of Works ought to place the whole or a large portion of their fire brigade stations and machinery in a central part of London simply out of regard to the interest of the fire insurance offices?—The fire insurance offices certainly contributed and agreed to their assessment of 35 *l.* per 1,000,000 *l.* for the purpose of maintaining the same force there which they had had before, which they had placed there when there was no one to share the expense with them, and an effort was made, although it was never reduced to be a part of the Act, to provide that all the stations which had been established by the brigade should be retained in their then positions and in their then force.

6558. May I ask you the question again, do you think that the Board ought to place the whole, or nearly the whole, of their fire brigade stations and machinery in the central part of London, because simply out of regard to the fire insurance offices it would be much better to do so; will you kindly say yes or no?—There are interests far beyond those of the fire insurance offices; there is the whole commerce of London.

6559. You do not think that they ought to?—I think they ought to have a brigade proportionate to the probable requirements upon it. I think that a fire in the docks or among the public wharves would call for a very different amount of assistance from what a fire at Shooter's Hill would.

6560. I conclude from your answer to me that you do not think that the municipal authority ought to concentrate all their force in one place simply out of regard to the interest of the fire insurance offices?—Certainly not.

6561. One of the stations you mentioned in your former evidence as having been discontinued by the Metropolitan Board of Works against the wish of the fire insurance offices was that in the Waterloo-road, was it not?—That station has subsequently been re-opened.

6562. Was it or was it not?—Yes, that is in my evidence

6563. May I ask you whether the fire offices were much alarmed at the discontinuance of this station?—I am not able to say that they were, because it was not a very important station.

6564. Then I presume if there was not much alarm then, there has not been much

much alarm since, up to the present time?—I do not know what the circumstances were which led to the re-establishment of that station.

6565. I asked you with regard to the alarm?—I cannot answer for the fire insurance offices' alarm.

6566. I thought you expressed the views of the fire insurance offices?—I am the Chairman of the Salvage Corps of the fire insurance offices, and I can safely say that they have been very greatly dissatisfied with the discontinuance of the stations.

6567. May I ask you to be kind enough to confine yourself to the Waterloo station; was there any alarm felt by the fire insurance offices at the removal of that station?—Personally I do not think there was any alarm.

6568. So that if there was no alarm before, there has been no alarm since?—The secretary will be able to tell you a great deal better than I can with regard to that matter.

6569. I did not suppose you could have felt that alarm, because when you were asked the other day you did not know that that station had been re-opened?—I did not.

6570. So that there could not have been any great alarm from any of the companies on that head. Now, to go to another station, and that is to the removal of the Wellclose-square station, will you tell me what objections you had to the removal of that station?—The objections to it were that the new station was more remote than the former one.

6571. Can you give the distance?—No, I cannot.

6572. Is it 200 or 300 yards off?—I do not know how far it would be.

6573. You objected to the removal of that station, although you did not know how much further it was than Wellclose-square?—I cannot personally tell you sitting here how many yards further it is; an objection was made by the committee.

6574. It was not on account of the distance?—I should say it was on account of the distance.

6575. If you were the chairman, and objected to the removal of the station on account of the distance, you can surely give the Committee an idea of the distance?—It was not the chairman who objected; the matter was in the hands of the sub-committee, and the sub-committee had interviews with the Metropolitan Board of Works, and at some of those interviews I doubt whether I was even present.

6576. You do not know whether it was on account of the distance or not?—Yes, I do, because it is in evidence that there was a good deal of discussion and conversation about it, going into the question of turning round the corner in Wellclose-square, and whether that turning round the corner would not be saved by going in a straight run a little further.

6577. Have you any idea what sort of a station the Wellclose-square station was; good or bad?—No.

6578. Have you ever been to the Wellclose-square station?—I have seen the Wellclose-square station, but the engine stations do not come under my charge.

6579. Then, in expressing that strong opinion which you did before this Committee that it was improper to remove that station, you never went to see it?—I expressed that opinion as the mouth-piece of the fire insurance offices; the fire insurance offices were very much dissatisfied with it, and expressed their dissatisfaction both by writing and by deputation to the Metropolitan Board of Works, but I am merely their mouth-piece; I have the management of the business of a very large office, and I could not be responsible for those details.

6580. You have never been to the Wellclose-square station, and know very little about it?—I can tell upon the map where one place is and where another place is.

6581. Have you ever seen Wellclose-square?—Yes.

6582. Can you describe to the Committee what sort of a station it was; was the egress and ingress good or bad?—You ask me whether I have ever seen Wellclose-square; I have, but it is so many years ago; it is not a part of the town that I have occasion to go to, and I could not undertake to answer questions upon that subject.

Mr. *G. W. Lovell.*

10 July 1876.

6583. Were the means of access to that station good or bad?—I must still refer you to those who know about it; I believe the access was not good.

6584. If an engine has to go round two or three corners before it can get a straight run to any place, that is not a very good situation, is it?—I suppose not.

6585. Will you take my word for it that that was the case at Wellclose-square?—Yes, probably it was.

6586. Now the station was moved to the Commercial-road, was it not?—Yes.

6587. Have you ever been there?—As I said of the other station, I have been there, but I have not been there since the station was removed.

6588. Have you been to the Commercial-road?—Yes, but accidentally, not with regard to inspecting these stations.

6589. Have you any idea what sort of road Commercial-road is; is it a good wide street?—Yes, I believe so.

6590. Then surely you would allow that if a station is placed in a street with a good run, north, south, east, and west, it is in a better position than in a contracted square where you would have to turn round three or four corners to get out of it?—Yes, assuming the description which you give of it, which I am not able to confirm or deny; our secretary is the person who would know that, and not the chairman.

6591. Assuming that what I state is correct, you agree that it would be a better place for a station in the Commercial-road than in Wellclose-square?—Except better reason could be shown upon the other side.

6592. Assuming what I ask you is correct?—That is assuming half the question; the other half of the question is the proximity of Wellclose-square to the docks.

6593. But you could not give me any evidence upon that, so I stopped examining you upon it; I wish to know what evidence you can give upon your own responsibility?—Upon my own responsibility I can give none with regard to that.

6594. I am bound, upon the part of the Metropolitan Board of Works, to ask you these questions; you have brought some serious charges against them, and I want to know what personal knowledge you have which enables you to verify the observations you have made?—Personally none; our evidence upon the subject will come from our superintendent, Mr. Swanton, and from our honorary secretary, Mr. Browne; they have taken great personal interest of the matter, and they know the details.

6595. Now, do you know that the Metropolitan Board of Works, before they changed the station from Wellclose Station to the Commercial-road, entered into negociation with the Docks to try and get land to place the engines upon there?—Of my own knowledge, I must profess ignorance with regard to the transaction.

6596. You stated, in answer to Question 6423, put by the honourable Member for Guildford, that one of the grounds upon which the Board decided not to adopt your suggestion was "something almost laughable"; would you kindly explain that answer to the Committee, because I want to know what there was so ridiculous in the answer of the Metropolitan Board of Works?—It may have been my special sense of humour which led me to regard the answer as laughable; but if you were told that a two-ounce weight would sink a ship as deeply as 100 tons, I confess the assertion to me would be laughable.

6597. Would you show me that in the correspondence?—We were told that the small floats would require as much water as the large ones. In a letter from the Metropolitan Board of Works of the 23rd of December 1871, there occurs this passage: "The suggestion about small steamers would seem to be based upon the assumption that a small vessel must necessarily have a lighter draught of water than a large one, which is by no means the case. Indeed, in the case of the floating engine last constructed, the reason why the builders (Messrs. Samuda) made the hull so large was to ensure her having a light draught. Moreover, even after going to such a size, they have not thoroughly accomplished the object, and have since recommended that she ought to be lengthened."

6598. Is it laughable to suppose, if you put an engine on board a small barge, it

it would draw a great deal more water than if it were extended?—It must depend, of course, upon the construction of the barge.

6599. And it is much better, is it not, to have a barge, or whatever it is, flat-bottomed, so as to be able to get near the buildings at low water?—What we asked was to have them built for the purpose.

6600. Are not those built for the purpose?—Not successfully, what we have now.

6601. You stated that the Metropolitan Board of Works "pooh-poohed" the representations of your committee; here is the correspondence, and with the permission of the Committee I will just put in the letter from the Salvage Corps of the 23rd November 1871, and the answer from the Metropolitan Board of Works of the 23rd December; is this the letter you referred to as containing that which you said was laughable (*the same were handed in*); is that one of the letters in which your suggestion was "pooh-poohed"?—What I refer to is the printed Paper (Appendix No. 9), which is among the evidence. It is a report by Captain Shaw to the Board, which begins by stating, in reply to my letter, that the fire insurance offices clearly understood very little about the subject. He says, "The suggestion about the small steamers seems to have been made without consultation with any practical person whatever, as it assumes that a small vessel must necessarily have a lighter draught of water than a large one, which is by no means the case."

6602. Is that a letter from the Metropolitan Board of Works to you or not?—No, it is a report from Captain Shaw.

6603. You allege that the Metropolitan Board of Works pooh-poohed your representations. Can you point out any letter or any correspondence from the Metropolitan Board of Works to the Salvage Corps, of which you are chairman, in any way treating disrespectfully anything that you suggested?—No, certainly not; their letters were as courteous as they could be.

6604. And the Metropolitan Board of Works gave due consideration to every thing which you suggested?—That is a matter which I could not speak to, with reference to what consideration they gave; but I would request permission to say this: If I have used any offensive term I am most anxious to withdraw it. I never intended to give expression to it.

6605. Do you withdraw the expression that upon any occasion the Metropolitan Board of Works "pooh-poohed" any suggestion made to them by you or the honourable body over which you preside?—With regard to pooh-poohing, I referred to the Metropolitan Board of Works refusing everything that we required.

6606. Do you, or do you not, withdraw every allegation of that kind against the Metropolitan Board of Works?—I will withdraw the expression "pooh-pooh." It may have been an unfortunate one. I doubt if it is a dictionary word. One falls into a conversational habit, and does not always select the best terms.

6607. You withdraw the expression?—I do.

6608. In the summary of your evidence you were reading out of on the last occasion I see it stated that, with regard to a fire at Rotherhithe, an hour and 25 minutes elapsed before any float was got to work; and in answer to Question 6445 you stated it was three-quarters of an hour; which rather shows that the statement published by the fire offices was incorrect?—I know nothing of that statement, but I believe the distinction is in the words "the arrival of the engine" and "the engine being at work." But Mr. Swanton knows all the particulars of it, and I know none of them.

6609. You read out of a printed paper from the fire insurance offices a very deliberate charge that upon this occasion the float was an hour and 25 minutes before it got to work; and in answer to Question 6445 you allow that it was three-quarters of an hour. Now I can state, from the report made by Captain Shaw, that the fire broke out at 5.13 on the 14th of December 1871, and that the officer in charge of the float had five deliveries at work at six o'clock. That would show that this statement of yours was not correct?—I really cannot make such an admission as that, because that was written out on behalf of the committee of the Salvage Corps, who receive their own evidence from their own officers, and believe that evidence. I have tendered and I believe you are going to call our chief officer himself; he was there, and he knows, of course, the

Mr. *G. W. Lovell.*

10 July 1876.

position and everything about it, of which I know nothing of my own knowledge. He will give his evidence to you, and he may be able to justify one or both of those expressions. I believe, also, there was a member or two of the committee at the fire.

6610. Although you read out of this paper you are not sure whether it is correct or not?—As a personal question, I may say I possess very little information indeed.

6611. In answer to Question 6445, after saying that you did not breathe any fault against the brigade, you say a long time had elapsed. For example, three-quarters of an hour upon the occasion of the King and Queen Granary fire?—That answer was given from information; it was a matter of which I had no personal knowledge.

6612. But you state in this paper that it was an hour and a half?—Excuse me, I do not speak from personal knowledge at all. I take the representations of the committee of which I am the chairman. The committee drafted a paper upon that, which was agreed to, and I, as chairman, signed it; but I say nothing in it of my own knowledge. I was not at the fire. I am not the person who can give evidence upon it.

6613. Then, in fact, whether it was three-quarters of an hour, half an hour, or an hour and 25 minutes, you have not the slightest idea?—Not further than from the evidence that was brought before us.

6614. With regard to the floats, do not you remember that there was a committee formed of your body and the Metropolitan Board of Works?—We had a meeting.

6615. Did we not come to the City and have a meeting with you there?—Yes.

6616. There have been a great many meetings. We have gone to Shand & Mason and endeavoured to get your views carried out?—That they have gone to Shand & Mason, who made tenders for the construction of engines, I am aware by hearsay.

6617. Of course, from your position as chairman of that committee, you must have been aware that Captain Shaw reported against the view which you entertained with reference to those engines?—I believe he did.

6618. Have not the Metropolitan Board of Works now under consideration the idea of having small floats with steam engines upon them, so as to endeavour to carry out your views?—I do not know what the Metropolitan Board of Works have under consideration.

6619. Take it from me that these things are being considered?—Messrs. Shand & Mason, I remember, tendered for the construction of a float which should have an engine of a given power, describing how many gallons per hour she would throw, and that this float should not draw more than 18 inches forward and two feet astern.

6620. You state that the Salvage Corps was established by the fire insurance offices, because after the transfer of the brigade to the Board it was no longer the main duty of the firemen to protect property; do not the fire brigade render upon all occasions every possible assistance to the Salvage Corps?—They work very nicely together. At the same time I think it would be unjustifiable in us to call the firemen away from extinguishing a fire to help us to save property. We furnish our own men for that purpose.

6621. In answer to Question 6385: "I think you stated that a considerable proportion of the money which you originally agreed to contribute, and do now contribute, to the putting out of fires, is diverted from the putting out of fires to the preservation of life"; you replied that you thought there were from 150 to 160 men employed in that duty?—I have heard that that was the number of men.

6622. Do you know how many fire-escape watches there are in the metropolis?—I do not.

6623. Then how do you come to the number of 150 to 160 employed in that service?—I have heard that that was the number of men; of course it is open to correction; it is a subject upon which I have no personal knowledge.

6624. The men who work the engines work the fire-escapes, do they not; they all work together?—I do not know; they are not our men.

6625. Now

6625. Now you gave an estimate with regard to money; in answer to Question 6308, page 13, you stated that the insurance offices' contributions ought to be diminished, because a large portion of the annual fund has been directed to the purpose of saving life; and in answer to Question 6385, you estimate that as a fourth part of the total expense of the brigade; would you kindly tell me upon what basis you made that estimate of one-fourth?—It is not an estimate of my own. I say it has been estimated, but I cannot say how far that estimate is correct. What I say is this: "There have been calculations made, I do not know how far they are correct, that it probably takes about a fourth part of the total amount for that purpose."

6626. In making that statement about the one fourth, you do not know how far it is correct, or otherwise?—And I have stated so.

6627. Do you know what portion of the funds of the fire brigade go to the fire-escapes?—I do not know.

6628. Take it from me that it is between 12,000 *l.* and 13,000 *l.* a year, which comes to a sixth and not a fourth?—Then this calculation appears to have been erroneous.

6629. You say the calculation appears to be erroneous; I will take it a little further?—I am quite satisfied with your statement.

6630. Take it that the Government contribution in 1876 is 10,000 *l.*; the contributions from the insurance offices, 18,905 *l.*; the rates, 48,148 *l.*, and small receipts, 2,750 *l.*; take the largest figure I have put to you of 13,000 *l.*; you cannot make 13,000 *l.* a fourth of the amount; I think you will allow it is nearer a sixth than a fourth?—I have not made the calculations myself.

6631. Do you know anything about Tooley-street. I think you objected to the removal of that station?—I am not aware that there has been any change there. I ought to say really, in distinct terms, that I do not possess a knowledge of the details. I have in my hands the business of a very large office to manage, and with regard to the Salvage Corps, I accepted the post of chairman, but I do not go into the details. The details are submitted to a committee, and the committee come to their conclusions, by vote if necessary. I merely, as their official organ, put my name to it, but I am not responsible for the details, nor do I in any way go into them, nor have I any opportunity of doing so.

6632. Did you state that none of your suggestions have been adopted by the Metropolitan Board of Works?—There were none.

6633. May I ask you whether the Fire Brigade Committee was not asked to assist the offices in discovering persons who committed incendiary crimes, in order to get the reward for giving notice of the discovery, and did not the Fire Brigade Committee assist you in order to enable you to carry out your plans?—But that was not among the suggestions we made to them. The suggestions we made to them were detailed in a letter.

6634. Did you make no suggestions to them on this matter?—There was assistance given in that respect. That was after we discovered that a man of the name of Anthony used to get up fires for the sake of the reward given for the information.

6635. In answer to Question 6469 you state: "The rate the offices pay is about 5 *d.* in the pound. They already pay ten times the amount of the public as a ratio." Will you let the Committee know how you calculate that?—We calculate that by taking the average premium at 3 *s.* 6 *d.* per cent, which I believe is a very fair estimate of what our average London premiums will come out at. Taking it at that, and the amount we pay and the amount insured, it will come out within an infinitesimal fraction of 5 *d.*

6636. That comes from your offices, of course, too?—I would scarcely say that, because it comes from my committee; I did not work out the figures myself.

6637. You adopt that?—I adopt that, and also I adopt the 3 *s.* 6 *d.* per cent. as the average rate of premium.

6638. How can you compare the two?—We are agreed in the amount which the offices are assessed upon, namely, 540,000,000 *l.* Take that 540,000,000 *l.* at 3 *s.* 6 *d.* per cent., you will find that the sum which the offices pay is within a fraction of a farthing of 5 *d.* per cent.

6639. That is how you calculate it?—Yes; I know no other way of getting at it.

 6640. There

Mr. *G. W. Lovell.*

10 July 1876.

6640. There was one more complaint you made, namely, with respect to the removal of the station in Farringdon-street. Do you know anything about that station?—In the same way that I know about the others; not from personal inspection.

6641. Are you aware that there has been a good station erected close by in place of the one that has been removed?—We consider Coppice row, Clerkenwell, a good way from Farringdon-street.

6642. The new station is a better station than the old one, with more men and more engines, is it not?—That may be; but it is further off, and its extra strength would not compensate, in our view, for the removal.

6643. If a better station is established at a better place, with a clear run all round, is not that better than being in a contracted place?—Farringdon-street is a tolerably open place. The station lay between two great thoroughfares, and in our opinion was in a very useful position; whereas Clerkenwell appears to us to be out of the way. There are no great accumulations of value round the neighbourhood, while there are very great ones in the neighbourhood of Farringdon street.

6644. What is the distance between the two?—I do not know that.

6645. When you were asked with respect to representation just now, you said that the members of the Metropolitan Board of Works represent the outside parishes?—As well as the inside.

6646. You know that the whole of London is represented upon the Board of Works?—Yes; but the considerations of the fire insurance offices do not go to the prevention of excessive fires in the outside of London; what you may call the country. We are not afraid of any excessive fires there, and when the offices furnished the funds for the fire brigade they did not establish any stations at all in those outlying parts. They were occasionally applied to to place stations in those parts, and declined to furnish them.

6647. Still you allow that the municipal authority ought to do it?—Certainly.

6648. With regard to representation, you do not think that representation upon the Fire Brigade Committee of the Metropolitan Board of Works would be of any use?—I do not.

6649. I suppose you know that there is a committee of 15 appointed, and that the representative you would send up could not be put upon the Metropolitan Board as representing ratepayers?—My reason is that the general interest of the ratepayers is to have protection everywhere, whereas the interest of the fire insurance offices is to have protection at certain fixed points, and I can never anticipate that those who already have protection near their own houses will be willing to give that up in order to afford greater protection near the docks.

6650. Do you think that those who have the administration would ever furnish that protection in an unequal way?—That is just the point; we want it in an unequal way. We want a special protection which we paid for when we kept our own brigade, and which we desired to retain in the new brigade.

6651. We place a new station in a better position and give you exactly the same or better protection than you had originally?—That I am afraid we shall not be able to agree to, taking our own special view. We do not care about the protection, say, of Hampstead.

6652. You prefer a small station with a worse position to a large station a little bit further off with more men and more engines?—If you put it in that way, I do not agree to it. We prefer to have our engine in the most accessible place, and we look more to the readiness of the assistance than to the immediate power of it; a single engine will sometimes check a fire while a dozen engines are arriving, whereas, if the first engine is further off we think we are at a disadvantage. The fire insurance offices decided upon the points where they thought fire engines were desirable for their own purposes.

6653. I think you stated that, as far as your opinion went, the fire insurance offices were satisfied to continue to pay the same contribution as they do now?—I think they would be, always assuming that they have fair value for it.

6654. You said that in France there was no contribution from the fire insurance offices for extinguishing fires; do you think the two places are upon the same basis?—I do not know at all the conditions there.

6655. Do

6655. Do you think that there are the same accumulations of goods in Paris as are in London?—There are some accumulations in warehouses there, certainly, but their fires are not so large; the houses are mostly well built, the floors being very often concreted. I understand that the French offices will sometimes take very large risks indeed, in consequence of the scarceness of extensive fires.

6656. Did you not state that efforts had been made to improve the character of buildings used for the storage of goods?—I stated that efforts had been made to limit the size of buildings; the legislation had been directed to restricting possible fires within such limits as the engines could deal with.

6657. The Metropolitan Board of Works tried to bring in a Bill for that purpose three years ago, but failed in carrying it?—I believe so.

6658. Did the fire insurance offices ever ask for representation when the fire brigade was handed over to the Metropolitan Board of Works in 1856?—Not to my knowledge.

6659. If they did want it, do not you think that would have been the proper time to make that representation?—It might have been, but I took no part in it, and I cannot tell. I recognise this fact, that the interests are very dissimilar; the one of the public for general protection, and the other of the offices for local protection.

6660. Mr. *Hardcastle.*] I want to ask you, first of all, one or two questions with regard to matters of fact, which will only require a very simple answer from you, and then I have one or two points upon which I should like to ask for some further information; is the Phœnix a mutual or a proprietary office?—It is a proprietary office.

6661. What dividend do you pay to your shareholders?—It depends altogether upon the results for the year; our shares are not for any nominal amount, nor have we any nominal capital; the shareholders are unlimitedly responsible.

6662. Can you give me any idea of what dividend you pay?—When you have not any capital to start your calculation upon, that is to say, no nominal capital, you cannot take it as a per-centage. Our dividends were for a good many years about 9*l.* per share, but that did not represent any fixed amount of capital.

6663. How many shares are there in the company?—Six thousand seven hundred and twenty-two; so that it was the 6,722nd part of the undivided interest in the Company.

6664. Can you tell me what is the proportion in value of your insurances upon movable property, and upon buildings?—I cannot; it would be a very laborious thing to keep such an account, and would answer no purpose of ours when we had got it.

6665. Is there any difference in the rate of insurance on movable property and on buildings?—Occasionally there is when you take into consideration the nature of the property. Suppose the property were pictures, china, or works of art, they would then pay a higher rate than buildings would.

6666. If you take the case of a warehouse containing valuable merchandise, would the rate of insurance upon the building of the warehouse be the same as the rate of insurance upon the property contained in it?—Supposing the property were not of a kind subject to special damage, such as those things I have mentioned (works of art, china and glass), the buildings and contents would pay the same rate. With regard to mercantile buildings, I am not in a position to answer that question, because we never take any buildings; we refuse all offers of buildings in mercantile depôts.

6667. You do not insure warehouses?—Not the public wharves nor the docks, nor any of those places which would come under a floating policy, where we have already a large amount at stake in merchandise.

6668. But they are insured by the fire offices, are they not?—By some of them, but the floating policy leaves us open to such an indefinite amount of loss, that the directors consider that they have always lost quite enough when a public warehouse is burnt with reference to its contents, without having the risk of the building also.

6669. You state that nowhere else besides London did the companies pay a

Mr. *G. W. Lovell.*

10 July 1876.

contribution to the fire brigade, and you afterwards admitted that in Manchester they did. Are you not aware that in Liverpool the fire insurance offices also pay a contribution?—It is not that they pay compulsorily; the Manchester or Liverpool authorities have, as I understand it, the power of calling upon owners of property to pay the expenses of the engines; the fire insurance offices are generally, perhaps I might say always, appealed to by the owners of the property to take their place or pay the expenses for them; therefore, for the sake of saving these expenses indirectly, the offices have agreed with the Manchester authorities: We will pay you so much a year if you will not make any claim for assistance upon our assured.

6670. Then in point of fact, both in London and in two of the largest of the towns in the country, contributions are made by the insurance companies towards the maintenance of the fire brigade?—Yes, but under very different circumstances; at Manchester and Liverpool they do so by arrangement; it is Act of Parliament compulsion in London.

6671. You were asked by the honourable Member for Linlithgowshire whether the premiums upon insurances in Liverpool had not been raised in consequence of improvements in the buildings; do you think that that has anything to do with the fire brigade?—I cannot undertake to say that it has.

6672. The honourable Member for Linlithgowshire endeavoured to extract from you an answer to the effect that the public suffered in consequence of the raising of the premiums by reason of these numerous fires?—What I said was, "the public interested in that class of insurance."

6673. Not the general public, but the public interested in that branch?—Not the general public, but the public interested in that branch of commerce.

6674. But it is the general public who contribute greatly to the support of the rates?—The question was not mine, and I could only answer it to the best of my power.

6675. I would like to ask you whether, as the movable property does not pay rates, and therefore does not in any way contribute to the expense of the brigade, it does not appear reasonable that those who make a profit by insuring the movable property should contribute to its protection from fire?—That is going rather into political economy; it is out of my depth; it certainly appears very reasonable that movable property should pay as well as fixed property, but I should say it is for those interested in the matter to devise the means of doing it; but you must remember that the fire insurance offices are paying in the same ratio for the buildings which contribute to the Metropolitan Board of Works funds, as upon the stock which does not, therefore if they are to pay for the stock, it would appear to be only reasonable to absolve them from paying on the buildings.

6676. Now in the case of a ship's salvage at sea, you are aware that a ship which rescues a derelict, or a ship which is in danger, has a claim for salvage?—Of marine insurance I have no knowledge; it is in principle so totally different from fire insurance that we stipulate in any case of ship insurance that the policy shall cease as soon as any policy is effected in a marine office.

6677. But you are here as the representative of the fire insurance societies. You maintain that in principle the fire insurance societies ought not to contribute towards the maintenance of this brigade, and in reference to that I ask you whether, inasmuch as the principle is admitted in the case of salvage at sea, it ought not, by a parity of reasoning, to be admitted in the case of salvage on land?—I should see very great difficulties in applying to fire insurance any regulations founded upon salvage, because our experience in the matter is in what is destroyed, and not in what is saved. For instance, we will suppose a nobleman's mansion to be worth 100,000 *l.*, and that he insures it for 10,000 *l.*, and that a partial loss is sustained; we pay the 10,000 *l.*; we have no salvage there at all, but he has 90,000 *l.* salvage.

6678. But the nobleman does not pay rates in proportion to the contents of his mansion any more than the insurance companies do; he pays upon the rent?—We are passing rather from the question of his paying by rate. As I say, the offices do not take that position, which you assume is a reasonable one, of standing in the shoes of the possessor of movable property, and paying his rates for him, because if they do that, they equally pay the rates of the fixed property,

property, though the owner of the property pays also. If you look upon the offices as representing the owner of the property, there is a double collection from the buildings; the payment of rent does not exonerate the owner from the payment of rates. Mr. G. W. Lovell. 10 July 1876.

6679. Do you make any difference between the property of an insured person and the property of an uninsured person, in respect of his being morally liable to the expenses of protection from fire?—As far as my information goes, it is everywhere recognised as a State or departmental duty to furnish certain protection against fire, and that out of the funds of the municipality or of the State, whichever it may be.

6680. But the only difference between the insured person and an uninsured person is, that one takes his own risk while the other shares his risk with the insurance company; is not that so?—You would not find it easy to carry out that distinction, because you must then go into the proportion he insures in; some men insure a very large portion of their property, and some a very small one.

6681. The other remaining question I wished to ask you is upon that point of representation. It was stated that the contribution of the offices formed about a third or fourth part of the cost of the fire brigade, and therefore it was urged that the insurance companies ought to have some representation upon the Board?—I have never urged that; I have said that it is the opinion of some that they should have it, but it has never to my knowledge been before any committee for discussion. I know there are offices who strongly entertain that opinion, but I cannot say that it is the opinion of all the offices, or that I ever heard that point discussed.

6682. I will ask you one other question, and that is whether I distinctly understood you to adhere to one statement you made, namely, that protection has been diverted from districts in which the offices are specially interested?—We regard it as such, certainly. I do not see, with the abolition of stations, how it can be otherwise.

6683. You do not think the new stations compensate, from their position, for the removal of the old ones?—No, I do not, because our object is the early arrival of the engines at a fire.

Mr. *Henry Richard Tomkinson*, called in; and Examined.

6684. *Chairman.*] I BELIEVE you are the Managing Director of the Sun Fire Office?—I am. Mr. H. R. Tomkinson.

6685. And Chairman of the Association of Fire Insurance offices?—"The Fire Office Committee" is the technical term for the association.

6686. What would you represent as the opinion of the Fire Offices Committee with respect to the contribution which they are at present paying towards the maintenance of the fire brigade in London?—That it is not a tax, but a sum voluntarily paid under an agreement arrived at ten years ago, on their giving up their own brigade.

6687. I suppose you would represent to the Committee that in your opinion the extinction of fire is a purely local obligation upon the authorities?—An obligation upon the community through its local authority, or any other channel it chooses to employ.

6688. And that whilst the insurance companies, upon the transfer of their plant to the Metropolitan Board of Works, agreed to pay a sum which they thought represented the amount of protection they were to get in the future as they had in the past from their own brigade, for a diminution of fires, it only represented that contribution, and not an assessment towards its maintenance in proportion to other bodies?—Certainly in proportion to the protection which they had themselves contemplated affording previously.

6689. Before the Fire Brigade Act was passed in 1866 the insurance companies had maintained this, not as a protection to property generally throughout the town as it is now, but as a protection to themselves as insurance offices for the diminution of great losses?—Certainly, in respect to particular classes of property.

Mr. *H. R. Tomkinson.* 10 July 1876.

6690. And that therefore, until it can be shown that the amount of benefit the fire insurance offices derived from the increased efficiency of the fire brigade does increase the diminution of risks which they wish to guard against, the consideration of any increase to their contribution ought not to be taken into account?—Not till then, nor even then.

6691. You mean to represent that, even supposing greater efficiency to be given by the Metropolitan Board of Works, and that therefore the object of the fire insurance offices, that is to say, the prevention of the spread of serious fires, and the diminution of great losses to them, could be attained by greater efficiency, even then an increased contribution should not be asked?—I think it would be fundamentally wrong in principle.

6692. At the same time, I suppose, with the last witness, you are not prepared to say that, looking at this contribution as wrong in principle, you would wish a re-arrangement and a diminution of the present contribution?—No; I believe the fire insurance offices have no wish whatever to depart from the agreement into which they have entered, provided the conditions remain the same.

6693. But notwithstanding that, provided the conditions are more favourable for the insurance offices, you think the contribution ought not to be increased?—I think it is wrong in principle. The fire insurance offices never admitted a principle in agreeing to the arrangement; they merely agreed to it under the circumstances, but they by no means acquiesced in the general principle that their contribution was to be proportioned to the amount of protection given to any particular class of property.

6694. I believe that with very few exceptions the arrangement which exists in London is not followed out in other parts of the country?—In none whatever; in no other place.

6695. In Liverpool and Manchester the Committee have had evidence to show that the insurance companies, in consequence of certain powers given to those localities under their Acts, do contribute voluntarily to the fire brigades of those towns?—To answer that question correctly, I should venture to intrude upon the Committee a statement of that matter upon a rather broad scale. The whole question of fire extinction has grown up by degrees in this country in a miscellaneous way. There are two methods by which brigades are maintained; the one is by a certain sum raised annually by contributions (for the moment it is immaterial from what sources), the other is by payments made for the services of the brigade at fires at which they operate. There are cases of brigades which maintain themselves entirely by the payments which they recover out of the fires at which they operate. In some few places the local authority managing the brigade has the power by statute to require payment for the services of the brigade. That is the case at Manchester and Liverpool.

6696. That is under their Acts?—Yes, that is under their Acts. The fire insurance offices are not legally bound under their policies to pay any sum which the owner of property is required under those statutes to pay himself for services rendered to him; but as a matter of practice they have consented to pay reasonable charges, reserving to themselves always the right to criticise those charges on such occasions, and in the towns of Liverpool and Manchester, for convenience, they have compounded with the local authorities. That is the history of their payments to those authorities there.

6697. Really that is an arrangement for the convenience of their customers which they have made with those localities?—Yes.

6698. And in no way, in your opinion, sets up the principle that insurance companies ought to contribute as a matter of right to the maintenance of fire brigades?—Quite apart from it entirely.

6699. Is it within your own knowledge that the fire insurance companies have felt that the Metropolitan Board of Works, since they have had authority over the fire brigade, have not looked after the interests of the fire insurance companies in the way that they were looked after at the time when the brigade was under their own charge?—I can hardly speak authoritatively of the general opinion upon the subject. I only state an impression, not that there is a general feeling that the Metropolitan Board of Works have failed to protect property in the sense which you indicate, but that there have been one or two instances in which the fire insurance offices have conceived that the protection which they had

had themselves previously given to certain classes of property was being, or in danger of being, somewhat diminished.

6700. I suppose that arose from the fact that whilst the insurance companies considered their brigade as more necessary to be concentrated in parts of the town where large masses of merchandise were brought together, the Metropolitan Board of Works, representing the whole area of the metropolis, felt their obligations to be of a wider description, and have spread their stations more generally throughout the town than had been the case before?—That was understood to be so.

6701. Whereas the interest of the insurance companies in those outside districts was not so great as it was in the immediate neighbourhood of the docks?—That the fire insurance companies themselves were quite aware of.

6702. Therefore their feeling was that, in removing stations from those places, to a certain extent the original contract as between them and the Metropolitan Board of Works, upon which this sum of money was limited, had been departed from?—I should be sorry to speak of any contract, because none existed; or of any legal obligation, because none existed.

6703. It was simply an understanding at the time that the fire insurance offices were to pay a certain amount of contribution, and believed that for that contribution the same protection would be given in the future as they had themselves maintained in the past?—It was merely an expectation and a confidence, without any written statement to that effect.

6704. I suppose, with regard to what has been spoken about at some length by the last witness, that is, the further recommendations made by the insurance companies to the Metropolitan Board of Works, and the result of those recommendations, Mr. Swanton will be able to give the Committee more direct evidence than you are prepared to give?—I cannot speak to it myself, having taken no part in the matter except the preliminary stage of writing a few letters to the Metropolitan Board of Works in 1869, but the matter passed out of my hands immediately.

6705. With regard to another point, namely, whether the fire insurance companies, contributing as they do, should be represented upon the Metropolitan Board of Works, have you any opinion upon that point which you would wish to submit to the Committee?—I should like to distinguish between my own opinions and the opinions of those whom I represent. Of those whom I represent, some, I am aware, have a strong feeling that the offices ought to be represented upon the Board, and others have not. I myself have not, and can state the grounds if desired.

6706. Would your objection to it be upon the same ground as that of the last witness, namely, that although you might be represented upon the Board, the number of your representatives would not give you sufficient weight upon the Board, whereas the public would suppose you to be satisfied by the fact of being so represented?—It is partly that and partly also upon the general ground that I conceive the Metropolitan Board of Works to be a body charged with large and numerous functions, which have to be administered very often in relation to each other, and that it could be hardly appropriate for any person to be a member of the Board, being at liberty only to deal with one of those functions, and not competent to participate with regard to the others.

6707. And that their being upon the Fire Brigade Committee, limited as it is in numbers, would not be satisfactory, from the fact that their decisions would have to be considered by the whole Board?—The ultimate decision must rest with the Board, which discharges the whole of its functions; and, might I be permitted to add, that the position of the representatives of the fire insurance offices would be simply advisory, and it might be possible that the companies should have the same position and have the same facilities for communication with the Metropolitan Board of Works (to whom, doubtless, suggestions from various classes of interests are not unknown) without being represented upon the Board, by the communication of any matter which seemed to them important.

6708. Are the insurance companies satisfied with the way in which representations have been made and carried out by the Board?—They are not satisfied, as no persons are when their recommendations are not adopted.

6709. Do I understand you to say that their recommendations have not been

Mr. *H. R. Tomkinson.*

10 July 1876.

generally adopted?—I speak with diffidence, but I believe not. Certainly the prominent ones, the only ones that I know of, have not been granted.

6710. One of those recommendations which were prominently put forward by your association related to the steam floats, did it not?—Yes.

6711. Are you personally able to speak with regard to what took place upon the subject before the insurance companies?—I am not as competent to speak upon the subject as I am afraid I ought to be. I was a member of a deputation which met in conference with the Metropolitan Board of Works, but the matter passed so entirely out of my hands and from under my ken afterwards, that I am quite unable now to recall the details.

6712. But I suppose one of the reasons why you would represent to the Committee that this suggestion of additional contribution from the fire offices is one that ought not to be entertained, is strengthened by the fact that since the establishment of the brigade a very considerable portion of their expenditure has been for purposes totally foreign to the original idea with which you created your own brigade; that is to say, for fire-escape purposes?—Yes, in so far as any portion of the amount contributed to the Fire Brigade Fund of the Metropolitan Board of Works is applied to any other purpose except that of the extinction of fires, I think something is done which is at variance with the expectation, if I may call it so, of the insurance companies at the time when the Act was passed in 1866.

6713. And that, in so far as those alterations have been made, or funds have been so diverted from that purpose, it would be a ground for diminishing rather than increasing the contribution to be taken from the insurance companies?—It might be; that would be a matter of degree. I apprehend it would depend upon what amount of protection of the kind contemplated by the companies when they had their own brigade was afforded, we will say, irrespective of the amount set apart for these extraneous purposes.

6714. Is there any other point which you wish to place before the Committee with regard to the idea of increased contributions?—I would like to mention to the Committee one point. I am not aware whether it has been before the Committee already or not, but the question to be decided by them would probably not refer to London only. I apprehend that it is impossible not to perceive that a decision of this Committee, especially if acted upon legislatively, would establish the principle of the taxation of insurance companies for the purpose of fire extinction which would be immediately acted upon in every town in the country, and I think I may say would most profoundly affect and modify that branch of commerce known as fire insurance in a way in which the Legislature is not usually wont to interfere with commercial undertakings.

6715. But as at present it is acknowledged that generally throughout the country there is no such statutory obligation on insurance companies to contribute, it would not be right in any way to recognise it by admitting that they ought to raise their contributions when any fresh alteration was made with regard to the contract of 1866?—I think so, certainly.

6716. And with regard to other things, such as life insurances, the life insurance companies are not called upon to contribute to any sanitary arrangements?—No branch of business that I can think of at all analogous to fire insurance has been called upon to contribute to any purpose analogous to that of fire extinction.

6717. The whole question being that, having had a fire brigade for your own purposes at the time when the transfer to these authorities took place, you made a composition for the continuance of that protection, but that it was merely an agreement between you and them for a particular purpose, and cannot be taken as the foundation of any fresh raising of money for the general efficiency of a town like this?—Exactly; it was penalty to be paid for an error in our younger and more foolish days.

6718. Is there any other point that you would wish to place before the Committee?—In response to that invitation, I should like to submit this general remark. Sometimes the soundness of a proposal may be judged of by the mode in which it may be carried out in operation. I would venture to submit that the principle of taxing insurance offices may be judged of to some degree from the fact that it is almost impossible to lay down any basis for such taxation which

Mr. *H. R. Tomkinson.*

10 July 1876.

which shall operate equitably. I submit that the present mode of contribution of 35 *l.* per 1,000,000 *l.* insured is really not equitable. If you look at the interest of the insurance companies they vary very widely, according to the nature of the business which the different companies undertake; an assessment according to the sum insured is not equitable, and an assessment according to premium I think could be shown to be inequitable also; it is almost impossible to devise any mode of assessment which will be absolutely equitable. Left to themselves, the fire insurance offices, in all towns where hitherto they have seen fit to contribute voluntary, have assessed themselves and each other by knowing what their several interests were; but no general system or special body could do so at all equitably.

6719. Mr. *Onslow.*] Supposing this Committee recommend that the fire insurance offices further increase their contributions; I suppose from your evidence we may presume that the fire insurance offices would resent any such further increase?—They certainly would oppose it by every lawful means in their power.

6720. They would not take it at all kindly?—No, I think not.

6721. Mr. *Ritchie.*] Would it be a more equitable way of getting a contribution from the insurance companies if they contributed in proportion to the rate raised in the metropolis for the purpose of extinction of fires?—No, I think not.

6722. Are you aware that that was the basis that was proposed at the time of the formation of the brigade?—I believe it was so with a limit.

6723. If the basis was granted could you tell me why there should be a limit?—I think I can explain that the insurance companies quite contemplated the possibility of what has already happened to a certain extent, namely, the operations of the brigade being extended very widely indeed, so as to become very costly, and therefore one-third of the amount raised by rate would be more than they could be properly called upon to contribute in the sense in which they were contributing, namely, as representing what they had already done for the protection of certain property; if hundreds of stations were distributed all about in places which they themselves would never have thought of putting a station, the fire insurance companies do not wish to have to pay a third or a fourth of the cost of those stations.

6724. But you are aware that the rate was limited to a certain amount, to a halfpenny in the pound?—I was not aware that the rate was fixed at the time that was discussed; my impression was that it was merely a discussion of the mode of assessment before any question of the amount of rate had been raised, or at all events determined.

6725. You still think that the present arrangement is as good an arrangement, at any rate, as the basis which was originally proposed by the insurance companies?—Yes, I think so; I have no reason to regard it otherwise, except that there is no limit.

6726. Mr. *Onslow.*] I put a question to Mr. Lovell, which he seemed to think I ought rather to put to you; do you think it is possible to get a return from the different fire insurance offices in London of their several losses on account of fire since the taking over of the fire brigade by the Metropolitan Board of Works; not separately, I mean, but to have it in gross within the metropolitan area?—I am reluctant to speak for other companies but my own; but the difficulties seem to me to be insuperable; whether the companies keep such a return or not, I am not aware; there is great difficulty in determining what property is within the metropolitan area. I would remind the Committee that that is a new division which was not familiar to the offices until the last few years, few comparatively looking at our age, and very few of us have our system of books adjusted to that, therefore, to get any statistics which should apply to that area which we were all ignorant of before 1866, would be very difficult indeed, and I am afraid it would not be safe to rely upon it.

6727. Sir *Henry Peek.*] Can you tell me whether any minutes exist of what took place at the time when the fire brigade was handed over, and when the 35 *l.* per 1,000,000 *l.* was agreed to?—The correspondence was all printed, I believe; a considerable amount of correspondence between the representatives

Mr. *H. R. Tomkinson.*

10 July 1876.

of the fire insurance offices, the Home Office, and the Metropolitan Board of Works, was, I believe, printed, and is no doubt now extant.

6728. Was that correspondence printed as a Parliamentary Paper?—I cannot say that; I have seen copies which were printed for the purpose of the fire insurance companies themselves.

6729. Mr. *Hardcastle.*] Do you consider that the principle of the Manchester Fire Brigade, namely, that the owner of the property in which a fire takes place pays for the expense of the fire brigade coming to put out the fire, is a fair one?—No, I do not.

6730. You do not think that it would be more equitable than the principle adopted in the London case?—I think not. I express my opinion, and I would refer, in support of it, to a view which appears to have been taken by the House itself recently. In this very Session a Bill was brought in by a large town with clauses to that effect, and before the Committee those clauses were disallowed. The matter was argued at considerable length.

6731. Mr. *Forsyth.*] What case was that?—The Huddersfield case, but the Committee appeared, as the result of their decision showed, to be convinced that the method of making each person who has a fire pay for the expense of putting it out was undesirable. If I might put it as a case of general principle, it appears to be analogous to the case of turnpikes. Up to a certain period a road is paid for by those who use it. When the community becomes larger and the inhabitants of the district increase, it is found to be not convenient to continue that mode, and then the roads are maintained in a general way by a general rating. With regard to a fire the question is not confined to the person upon whose property the fire breaks out; it is not the person only whose property is benefited but the whole of the district is benefited by the existence of the brigade, because you could never say how far a fire would extend, if it were not put out.

6732. Is that confined to Manchester?—No; Manchester, Salford, Liverpool, Newcastle, Dublin and Belfast are the towns which are known to us as having local Acts, and I venture to add all of those Acts were passed some years ago, before the attention of the Fire Brigade Committee was drawn to this subject, and therefore, whether for that reason or not I do not know, they were not opposed, I presume; but all these towns have Acts enabling these charges to be made upon the owners or occupiers for work done at fires.

6733. Did the fire insurance companies oppose the Huddersfield Water Bill in Committee?—They were unable to oppose because they had no *locus standi*; they cannot oppose upon their own behalf; the matter was represented to the inhabitants, who were willing and anxious to put in a petition, and they did put in a petition, and the insurance companies supplied some of the arguments.

6734. *Chairman.*] Could you give the Committee the dates of the Acts which you have referred to?—The Liverpool Acts are the 5th & 6th Vict. chapter 106, 6th & 7th Vict. chapter 109, and the 7th & 8th Vict. chapter 51. There are some later Acts with regard to petroleum and other matters of detail, but those are principally what you require. The Salford Act is the 25th & 26th Vict. chapter 205, and the Manchester Act is the 7th & 8th Vict. chapter 40. If I might be allowed to make a remark upon the question of direct taxation, I would say that two years ago a Bill was brought in by the local authority of a town in the North, namely, Bradford, containing a clause imposing a tax upon insurance companies in much the same sense as the London Fire Brigade Act does. We understood that to be disallowed, even before it went into Committee, by the authority of the House, as being taxation in a private Bill, which could not be permitted. I am not sure whether I am correct in saying so, but at all events the clause was withdrawn without any opposition.

6735. Mr. *Hardcastle.*] Can you give me any idea of the relative amount of insurances paid upon movable property and upon buildings?—Not at all. I doubt if any office could; it is not a statistic in this country which we have any object in keeping, because the rates are not, except in a few exceptional cases, different.

6736. Do you think it is a fair general principle that the rateable property should supply the entire cost of the maintenance of a fire brigade which is employed

ployed also in extinguishing fire and protecting moveable property?—I presume it is just or unjust with regard to fire extinction as with regard to all other property, for which immovable property pays the rates by which movable property benefits.

6737. For what purposes?—All purposes; real property being taxed for every purpose, I presume. I do not see myself any difference between fire extinction and any other public duty.

6738. Do you think that the present system adopted in the metropolis of a contribution by the insurance companies in proportion to the amounts which they insure is a more equitable one than the principle of the persons whose houses are on fire paying for them separately?—I think it would be most desirable if every kind of property contributed in proportion to its value; I presume abstract justice would require that for fire extinction purposes, as well as for all other purposes; but I am not quite sure whether I understand your question.

6739. My question pointed to this: In Manchester there exists the system of a person whose house is on fire being charged for extinguishing that fire, and in London there is this principle of the offices contributing in a lump sum; you think of the two, the Manchester system the most objectionable, do you not?—It is difficult to compare the two; it appears to me that a fairer comparison will be between the Manchester system, the people contributing when their houses are on fire; and the London principle, the people contributing *quâ* ratepayers to the general fund for maintaining the brigade.

6740. Are the principal insurance companies bound by a tariff of charges amongst themselves with reference to the rates they charge?—On certain classes of property they agree upon what rates they will charge.

6741. Then the diminution of serious losses by fire does not operate in the reduction of premium because there is no competition between the offices?—If I may say so, there is really a competition, because amongst the body of the offices who agree on certain rates, there are what I may call representatives of almost every interest and every class of property; I shall be supposed to be special pleading, when I submit that substantial justice is done by some office or other representing the interest of each class of property, and securing that the rates upon it, if they are subject to tariff at all, should be adjusted reasonably.

6742. Mr. *Forsyth.*] What interest have the fire offices in opposing the Manchester, Liverpool, Belfast, and Newcastle plan, which imposes upon the owner the liability of paying the amount incurred in extinguishing the fire; how does that affect the fire insurance offices?—Because they do as a matter of fact pay a portion of it; as much as they see fit to pay.

6743. That is by agreement only?—Yes, it is by agreement only; but as a matter of principle the fire insurance offices consider it most important upon the broad ground of asserting continually in this country that the same principle should be upheld as is upheld in all countries upon the continent, namely, that fire extinction is a public duty.

6744. But looking at the fire offices simply as mercantile bodies, what interest have they in opposing that statutory obligation being placed upon the owner whose property is burnt?—I do not think they have any direct interest in the way you mean. They have an interest in the way of looking at insurance as a process which it is desirable to maintain upon as sound a basis as possible.

6745. Mr. *Hankey.*] Do you think that the expenses incurred in protecting property against fire in a town should be paid upon any other principle than that of protecting life and property in the usual way by the police?—Certainly, none whatever.

6746. Do you consider the question to be otherwise than purely a police question?—It is to my mind entirely analogous to the police question.

6747. Do you consider that upon any abstract principle of justice or expediency the insurance companies ought to be called upon to protect property from injury by fire, unless they have received a premium by which they have made themselves so liable? Can they, upon any principle of equity, be called upon to protect property against fire unless that property has been insured by them?—Certainly not, nor even if it has been. They receive the premium not to

Mr. *H. R. Tomkinson.*

10 July 1876.

protect the property from fire, but to pay any loss which may occur to it by fire.

6748. Do not you think that the principle of looking after or attending to a fire brigade is quite antagonistic to the principles of an insurance company?—Quite so.

6749. And that they have no peculiar facilities or business arrangements of any kind to qualify them for protecting property against losses by fire?—Not the least. They are certainly incompetent for that duty. I should say it is a function entirely different from what they have undertaken, and imposing a new work upon them.

6750. *Chairman*] Is there anything that you wish to add to your evidence?—There is one point to which I would allude which arose in the examination of other witnesses, namely, with regard to the efficiency of the fire brigade, comparing one period with another. With regard to any question of efficiency of extinction service or of rates, in comparing one period with another, I trust the Committee will not omit to notice the other side of the equation, which is the change of risk. It seems to me most material, in comparing either fire extinction at two times, or rates at two times, to compare the risk at two times, it being an undoubted fact that fire risk increases yearly.

6751. That the fire risk increases as you bring increased property into the area?—That increases the destruction by fires; but the chances of fires increase. Every new process, and every sub-division of labour which is introduced, introduces a new point at which the fire risk may intrude, and each new point which is introduced has to be counteracted by additional precaution and care, and it all turns more and more upon the human element.

6752. Mr. *Ritchie.*] I wish to ask you a question upon that statement; would you consider that the same brigade which was thought to be adequate for the protection of property from fire in 1866 would be adequate for the state of things which exist in 1876?—Certainly not. If the same brigade existed now it would be perfectly childish for the purpose.

6753. I am talking of the brigade which was estimated to be required when it was taken over by the Metropolitan Board of Works in 1866?—Quite so. I am not aware how that was estimated. I state the principle that in 10 years there is a distinct increase in the chances of fire, and still more owing to the accumulation of property in the chances of destruction by any fire, and the difficulty of contending with it.

6754. And, therefore, what was sufficient in 1866 would not be sufficient in 1876?—If it was sufficient then, that would be a matter of opinion; but it would not be relatively sufficient.

6755. Mr. *Hardcastle.*] Do you mean that the number of fires in proportion to the number of buildings has actually increased within the last 10 years?—I am not able to speak from statistical knowledge, but I am under the impression that that is so, certainly.

6756. Do you mean that the value of property consumed by fire has increased in proportion?—Upon that also I have no statistics to warrant my answering.

6757. What do you mean by saying that the risk has increased?—The risk to property, and the chance of property taking fire has, owing to causes which I could specify in detail, increased very largely. The chance of a large amount of property being destroyed by fire when it does occur, is increased by the large accumulation, and I think by the increased number of very large buildings.

6758. In point of fact, you are putting up the theoretical chance of fire against the actual fact of the number of fires shown by the returns of the fire brigade?—I am not aware what the returns of the fire brigade do show.

6759. They have not shown any increase, but rather a decrease in the proportion of fires taking place in the metropolis, that is to say, of serious fires?—That would depend upon which way the fires were dealt with; a fire would never be a serious fire if it were soon put out. You introduce another element into the question there, namely, what has been done to extinguish fires.

Mr. *H. R. Tomkinson.*
10 July 1876.

6760. Mr. *Onslow.*] Would you describe some of those extra causes of risk that you mention?—The increased application of machinery to a greater number of purposes is one cause. Machinery is always a source of risk; the greatest risk, I apprehend, is the introduction of petroleum; no one knows how that pervades everything, down to our private houses. The number of fires that we have from the explosion of lamps is very remarkable; you may find a fire in a wharf affected simply from the fact of the machinery for a lift being lubricated with mineral oil.

Mr. *Alfred Tozer*, called in; and Examined.

Mr. *A. Tozer.*

6761. *Chairman.*] You are the Superintendent of the Manchester Fire Brigade, are you not?—I am.

6762. You were connected previously with the fire brigade under Mr. Braidwood, in London, were you not?—I was.

6763. Were you long in that service before you went to Manchester?—I was in that service from 1851 to 1862.

6764. And then you were transferred to Manchester?—Yes; I left the brigade a portion of the time. I was detached to go out to the East during the Crimean War. I was there about 20 months.

6765. Can you state to the Committee, from your knowledge of the brigade in London and its working, the difference of the working and the organisation of the brigade in Manchester?—I will endeavour to do so. The Manchester Fire Brigade is managed by the Watch Committee of the City.

6766. Is the fire brigade a portion of the police force of Manchester?—No, it is not, but it is managed by the same committee. It consists of one superintendent and 50 men. The stations are 16 in number, situated in different parts of the city.

6767. That does not include Salford, I believe?—It does not. Nine of the stations are at police stations; five of them are at large public buildings, and the other three are distinctly fire stations. The firemen reside at four engine stations, two of which are distinct fire stations, and the other is a police fire station.

6768. Do your police and fire brigade work together in extinguishing fires?—The police assist the firemen; they render at any time a willing assistance when called upon.

6769. I imagine that is the case with regard to the police and the brigade in London; that the police assist the brigade, but that they have other duties to perform, namely, to keep order and to protect property?—That is also the case in Manchester.

6770. In Manchester you work under a system of water supply with hydrants attached to it?—Yes, the engines are only used at about 3 per cent. of our fires; we have about 300 fires a year, and at nine of those the engines were used to assist the pressure.

6771. In general your pressure is sufficient to enable you to extinguish a fire without the use of engines, is it not?—It is.

6772. I suppose there is considerable advantage in that?—There is, from the easy way in which you can attach the hose to the mains, and the rapid way in which you can get to work at a fire; you get rid of the persons who used to attend fires for the purpose of earning a shilling. We find very few people attending our fires, especially at night, in Manchester.

6773. Do you know at all the proportion of what are called serious fires?—We consider a fire a serious fire if one-sixth of the property at risk is destroyed.

6774. What proportion have you in Manchester?—Last year, 1875, there were 20 serious fires, and 288 slight fires; that is to say, fires in which there would be less than one-sixth of the property at risk destroyed.

6775. Is it with regard to that year that upon nine occasions the engines were called out?—At two fires the engines were worked without assisting the mains; that is to say, from river or reservoir. At seven fires the engines were called upon to assist the mains; at 81 fires they were extinguished by the mains alone; at 72 by hand-pumps, small pumps working in a bucket; at 40 fires the firemen

Mr. *A. Tozer.*

10 July 1876.

and the police extinguished the fires with buckets of water; at 26 fires the police alone extinguished the fires without the assistance of the firemen; that is to say, before the arrival of the brigade; at 79 fires the owners of the premises, before the arrival of either the police or firemen, succeeded either by attaching a jet to the mains, or their own private appliances, or by some other means, in subduing the fire before the brigade arrived.

6776. The whole town being under constant supply, and with considerable pressure?—Yes; the pressure averages about 50 lbs. during the day, and about 90 lbs. during the night.

6777. And that 50 lbs. pressure is a steady constant pressure arising from gravitation which you can depend upon whatever draw there is put upon it?—Yes; we have about 10,000 hydrants or fire-cocks in Manchester.

6778. You have a good many more, have you not, in the suburbs of Manchester?— Yes, we have 7,000 more.

6779. Are they all under the same fire brigade?—They are all under the Watch Committee; we supply protection to eight other suburban districts.

6780. Your brigade protects the suburban districts?—Yes; in the event of a fire we should render them assistance.

6781. Does the number of those fires apply to the whole district, including the suburbs?—I will give the number of fires which we attended in the suburbs which will have to be deducted from the 308; there were 16 fires in the suburbs, which deducted from the 308, would leave 292.

6782. You stated that under your system a certain number of your stations were attached to police stations?—They are actually police stations.

6783. And that a certain number of the fire stations were at public buildings, and some were absolutely fire stations?—Yes.

6784. Are these the only places in the town where you keep appliances for extinguishing fires?—There are two churches, which I have put among the public buildings.

6785. What is the total number of places at which calls may be made for the assistance of the firemen?—Sixteen altogether; we also watch the different theatres in the town, of which there are three.

6786. But there are 16 places at which your appliances are kept, which you can take on a call to a fire?—Yes.

6787. I suppose your system is, that a hose is taken to a fire, followed by an engine if you find the fire is serious?—Yes; we have eight hose-carts and eight fire-escapes. The hose-carts contain 200 yards of hose, and the fire-escapes are also hose-carts and contain the necessary appliances to subdue fire. We have men on duty with those fire-escapes night and day.

6788. Then the fire-escapes are kept at their stations during the day as well as at night?—Yes.

6789. I suppose you would hold that that system is a better system than the one adopted in the metropolis, which only keeps fire-escapes on duty during the night?—I think so.

6790. Practically, of course, I suppose it is found that the fire-escape is as necessary during the day as during the night?—Quite so, being necessary for the purpose of elevating the fireman to a place from which he can do his work so much better than from the ground.

6791. Have you the amount of mileage in the area?—It is $6\frac{3}{4}$ square miles.

6792. Does that include the suburbs?—No, that is the limit of the city itself. Then we protect about five square miles in addition to that.

6793. Can you give me the street mileage of the city?—No, I cannot give that.

6794. From your previous knowledge of the working of the system under Mr. Braidwood and the system which you now superintend, are you in favour of combining the police and the fire brigade together?—Not of making them actually one body, but of placing them, certainly, under the same authority.

6795. What advantages do you attribute to that?—I think that the men are so often called to act together that they would receive instructions better from the same committee than they would from two separate committees; at any rate, I think the system works better in Manchester.

6796. From that I gather that you think the fire brigade in London would be strengthened by making the police stations also fire stations?—That is so; I think

I think every cabman's shelter in the city should be converted into a fire station.

6797. That is to say, that the appliances for putting out fire might be under the charge of the police attached to every station of that kind?—I think so; you would have all the advantage of the cabmen assisting the firemen to the fire.

6798. That would be rather an amateur system, would it not?—We find very great assistance from them in Manchester, but we have only two shelter huts at present in Manchester.

6799. I suppose what that opinion points to is, that it would be a very great advantage to multiply as far as possible the places where you could find appliances which could be readily used for the extinction of fire?—I think so.

6800. I imagine that must depend upon your having, as you have in Manchester, a constant supply at your command?—Yes.

6801. Instead of the intermittent supply which you have in London?—It would, of course.

6802. In those hose reels you use a different kind of hose in Manchester, do you not, from that which is generally used in London?—Yes, we use canvas hose.

6803. What would that weigh?—Take 50 yards of canvas hose as compared with leather hose; it would require four men to work 50 yards of leather, whereas one man can work 50 yards of canvas; leather is rather more than four times the bulk; rather more than four times the weight, and four times the cost.

6804. If you had to place hose largely throughout at fixed points it would be a great advantage to use flaxen hose from its lesser bulk, as well as from the fact that one man could work it, whereas it would take more with leather hose?—Yes; it would take four men to do the same amount of work, and the one man could do the work quicker than the other four could.

6805. Having used this canvas hose for some years, do you find it durable?—I think with equal care a leather hose would last twice as long as a canvas hose; but we have several hundred yards of hose which were purchased in Manchester before my appointment; we have 8,500 yards of hose in Manchester.

6806. I suppose that one of the advantages you would represent as likely to arise from combined action as between the police and the fire brigade, would be that a policeman being immediately upon the spot where a fire broke out, could apply the hand-pump which you spoke of, or even the hose if necessary to many fires, and extinguish them before they got so serious as to require the use of an engine?—That is so; it very often happens that a policeman on his beat would have his attention drawn to a fire where he could readily extinguish it if he had the means at hand.

6807. In Manchester those means are sufficiently near him by being placed at the 16 stations you have mentioned?—We think so.

6808. Are you able to speak with reference to the cost of the hydrants which are placed upon the mains at Manchester?—Our hydrants when laid upon a new main costs about 30 *s.* each.

6809. That is to say, when laying them upon a main at the time of a new main being put down?—Yes; say it was a 4-inch main, it would cost 30 *s.* 8 *d.* to fix a new hydrant, but supposing you were going to attach a hydrant to an old main, and take up the ground and put it down again, and put in a connecting piece, it would cost 2 *l.* 15 *s.*

6810. That is merely the hydrant and the box; it does not imply the stand post?—No; it means the whole expense connected with the main, including the cost of the hydrant and the relaying of the streets.

6811. I understand that the hydrants are placed upon the mains direct, not upon the sides with a connecting pipe?—That is so.

6812. It would be an additional cost if the hydrants were placed by a connecting pipe upon the main, would it not?—Yes, it would.

6813. Are you aware of the particular hydrant which is used generally through Manchester?—The Bateman Ball Valve it is called.

6814. It has been stated in the evidence given before this Committee that that

Mr. *A. Tozer.*
10 July 1876.

hydrant is not a satisfactory one for working purposes. What is your opinion of that hydrant from your experience of its working in Manchester?—I think it is exceedingly simple.

6815. Are they known to get out of order?—We occasionally break what is called the lugs off the top of the hydrants, the damage being caused by persons anxious to assist us hauling on the hose.

6816. You do not find that the hydrant itself gets out of order?—No, it requires new rings occasionally.

6817. You have not found any practical difficulty from those hydrants in the working of your fire brigade in Manchester?—No.

6818. And those hydrants are able to be put down at the cost you have mentioned?—That is so.

6819. At what distance are they fixed apart?—About 100 yards. In the neighbourhood of some of the large buildings they are perhaps within 25 yards of each other.

6820. You reduce the number of them according to the property which is in a particular street or district?—Just so. In small streets there would be at least 100 yards between them; in large streets where the property is lofty, or where a great number of hydrants are likely to be required, they would be closer together. I think it would be fair to say that they average about 75 yards apart.

6821. From your experience of the system you have been now working for some time in Manchester, you think that system if adopted in London would add materally to the security from fire of this metropolis?—The constant high pressure would.

6822. The constant high pressure service, with hydrants placed upon it, and with communication with the police stations, would very materially, in your opinion, add to the security of the town?—Yes, I do think so.

6823. That opinion is grounded upon the fact, that the police and the fire brigade have so much in common in working at fires that they ought to be drilled practically, to a certain extent, under the same authority?—Yes, and managed by the same committee; that is my only reason for thinking so, that it works so well in Manchester that the police are always ready to give us every assistance; they work at fires as firemen, if necessary.

6824. That, I imagine, you would represent to be the essence of the policy; I presume you do not refer to the police who are absolutely on duty in protecting the property?—It very often happens, that if there are more policemen at a fire than are necessary for preserving order, and if we can find anything for them to do, we should ask them to assist us.

6825. And supposing the police in some way to be connected with the brigade in London, in the same way the presence of the police would always be useful for the purpose of assisting the brigade, would it not?—I think so.

6826. Besides the advantage of the additional number of stations, which would be afforded by each police station being practically a fire station?—Quite so, for a person, when he wanted assistance, to be able to run to one place instead of two.

6827. Is there any other point you would like to place before the Committee with regard to your experience of the working of the system in Manchester?—No, I think not.

6828. Mr. *Ritchie.*] You find hand-pumps to be of considerable service in putting out fires?—We do.

6829. You stated that 70 of those fires had been put out by hand-pumps?—Quite so.

6830. Therefore, until we were able to avail ourselves of the high pressure system in London, do you think that many of the fires might be prevented from becoming serious fires, and in many cases might be extinguished, if the police had hand-pumps placed where they could get at them, either night or day?—Quite so.

6831. One witness, I think, rather pooh-poohed the hand-pumps, but you find them very useful in Manchester?—Our hand-pumps are much larger than they are in London, but I have seen in London many fires, which would appear to be alarming fires, subdued by the use of hand-pumps.

6832. Your

6832. Your experience goes to show that if some system of that kind were adopted by which the police could assist the firemen in the way you speak of, by commencing upon the fire before the arrival of the engines, the serious losses might be reduced still further than they have been; they are at present 11 per cent. of the fires?—Yes.

6833. Your per-centage in Manchester was 7 per cent. of serious fires?—Yes.

6834. How many men do you say you have in Manchester?—We have 50 firemen.

6835. And what is the number of square miles?—Six and three quarters.

6836. That gives you about seven firemen to every square mile in Manchester?—Yes.

6837. Do you know the number of square miles in London within the Metropolitan Board of Works area?—It is about 120 miles, I believe.

6838. And that gives, taking the number of men at 390, about three to the square mile against your seven in Manchester?—Yes.

6839. That is in addition to the assistance given by the police and in addition to the immense advantage you gain by having a high pressure of water?—That is so.

6840. Do your men complain of any excess of duties that they have to perform at all?—They do not.

6841. Is it a thing that often occurs to your men not to have a night in bed in a week?—It occurs in this way, that they go on duty for seven nights; then the duty is reversed, and they are on duty for six days, and at the end of that time they are allowed 24 hours' leave of absence.

6842. Can you give the Committee an account of the number of hours duty; suppose a man has to go on duty on Sunday, what does he do?—He is on duty till the following Sunday; that is to say, he is on by day, and then on the following Sunday he would be on duty for 24 hours; he would then go off duty till the Monday night, and then he would take duty again.

6843. But he goes on Sunday on day duty, let us say; does he go to bed on Sunday night?—No; I say he is on duty from Sunday to Sunday every day for 12 hours a day.

6844. At what time in the morning does he commence his day's duty?—At 8 o'clock.

6845. When does he go off duty?—At 8 o'clock on Sunday night.

6846. Then he could go to bed on Sunday night?—Yes, that night, and every night in that week; but at the end of the week, on the following Sunday, he would be on duty the whole day of the 24 hours.

6847. We have gone through the week on which he is on day duty; now at what time on the following Sunday does he commence the night duty?—He commences the night duty at 8 o'clock on Sunday night.

6848. When does he go off duty?—At 8 o'clock on Monday morning.

6849. At 8 o'clock on Monday morning, he can do what he likes with himself till 8 o'clock on Monday night?—Yes; he goes to the station and goes to bed, and then, at the end of 13 days, he is allowed 24 hours' leave of absence.

6850. Have you a superannuation scheme there?—Yes, we have. (*The Witness handed in a Table.*)

6851. I presume your brigade is in every way satisfied, both with the amount of duty they have to perform, with their pay, and with their superannuation?—I hear no complaints.

6852. Mr. *Onslow.*] Have you ever made an estimate of how many engines you would require in Manchester, and how many more men you would require, if you had not a constant supply of water?—I have not. When I first went to Manchester in 1862, we had 10 engines. I recommended that nine out of the 10 should be sold, and that five others should be purchased, which made six; and then in 1871 we purchased a steam fire-engine, and in 1873 we purchased another, making eight, of which two are steam fire-engines and six manuals, besides which we have eight fire-escapes and eight hose-carts.

6853. I suppose the system of constant supply does save the fire brigade a great deal of money; that is to say, if it was not for this constant supply, the cost of the fire brigade in Manchester would be very much more than it is at the present time?—Yes, for assistance and for engines.

Mr. *A. Tozer.*
10 July 1876.

6854. And you would require to have more men?—We should certainly require more men if we did the work as rapidly as it is done now.

6855. Have you had recently many serious fires in Manchester?—I think we have had four within the last year.

6856. Were those fires that your brigade had some difficulty in coping with?—Yes; there have not been more than two fires since I have been in Manchester where the premises have been wholly destroyed; that is to say, not premises of any note at all, such as a warehouse.

6857. You think that with your present system, with your present number of engines, and with your present staff, you are able to cope with any fire that could possibly arise in Manchester?—I do think so.

6858. Are there any other advantages of leather hose over canvas beyond that which you stated just now, that leather would probably last twice as long as canvas?—Yes, if both were properly cared for; but with canvas hose all that requires to be done is for it to be thoroughly dried after it has been used, and then it is ready for the next fire, whether that be in a week or 12 months, as long as it be kept dry; whereas leather hose requires frequent oiling and brushing, and that requires men to do it, and there is the time that it occupies them.

6859. Do you get recruits easily in your brigade?—We have always several in the brigade.

6860. What class of men do you enlist?—They are mixed; labourers and sailors. I think it is advisable that they should be mixed.

6861. Are you aware that in London only sailors are taken?—I am.

6862. From your experience both in London and Manchester, do you think there is any practical necessity for recruiting a fire brigade for a large town wholly from the maritime population?—No, I think not. If we thought otherwise we should take them wholly from sailors.

6863. You are able to get athletic young men of 17 or 18 of the labouring class, and make them as good firemen as young sailors?—Yes, I think so.

6864. What is your minimum age for enlistment?—Eighteen is the minimum, and 30 is the maximum.

6865. Do you get many sailors to enlist at the age of 18?—Yes; we are not particular about whether they are men-of-war's men or merchantmen; in fact, as a rule, I would sooner take a labourer than I would a man-of-war's man or a merchantman either.

6866. May I ask why you said just now that they ought to be mixed?—I think, generally, there is an advantage in mixing them, for a few sailors are very useful.

6867. Do you find sailors dislike the fire brigade work as a rule, and that they go back to sea?—No, I think not. As a rule our sailors generally settle down and stop with us.

6868. Can you give the Committee any average number of years which your men stop with you?—The brigade was reorganised in 1862; it consisted originally of men who pursued some other daily avocation, such as masons and bricklayers, and when the brigade was reorganised, there were very few of the old members who joined the new brigade; the average length of service is stated, I think, to be three years and six months that they have stopped with us so far since the reorganisation in 1862.

6869. At the end of that time they are not entitled to any superannuation or gratuity at all?—No, the superannuation fund was not formed at that time.

6870. Do you think that if you had a superannuation fund the men would be inclined to stop longer?—Yes, I think so.

6871. Can you speak with any certainty with reference to that; have you been in communication with the men?—The men are satisfied with the fund as the committee have arranged it. They contribute about 3 per cent. of their pay.

6872. As regards the training at Manchester, is the training as severe at Manchester as it is in London?—I cannot speak for the training of the London Fire Brigade since the appointment of Captain Shaw, but previously to that there was little or no drill with the exception of the young men when they were at first appointed; they were then drilled until they were considered efficient by their

their officers, and then after that their drill ceased; in Manchester we drill every week on Friday for an hour and a half.

6873. I should just like to ask you, have you had any opportunity of reading some of the evidence which was placed before the Committee upon the last occasion regarding the working of the fire brigade in Brighton?—I have not seen that.

6874. You do not know the system in operation in Brighton?—I do not.

6875. Sir *Henry Peek.*] You stated that the pressure of water at night was 90 lbs.?—The pressure is about 90 lbs.

6876. And the pressure by day was 50 lbs.?—Yes.

6877. Do you mean to say that you lost that 40 lbs. pressure from the water being drawn off for other purposes?—For domestic and trade purposes.

6878. The pressure is always high, but it is less in the day from that cause?—That is so.

6879. And you reckon that the pressure is about one-half in the day of what it is in the night?—About that.

6880. Could you obtain more pressure, supposing you wanted more pressure, than 50 lbs. by day?—Yes; very quickly.

6881. How would you get that increased pressure?—By turning on another pressure, the Godley pressure, which is only used for the purpose of assisting the Denton and the Gorton pressures, and the higher districts of the town.

6882. Can you do that as firemen?—We have turncocks attached to the brigade; two of those reside at the stations; they know all about the pressure, and they know how to turn on the valves.

6883. Is there a Salvage Corps at Manchester?—No, there is not.

6884. It is part of your duty as firemen to protect property all you can?—Yes, we act as a Salvage Corps for the fire insurance offices.

6885. Mr. *Clifton.*] Do all your men live in the stations?—Yes, they do.

6886. And in case of married men, how do you manage?—We have stations and married men's quarters at them, and the married ones take the single ones in as lodgers.

6887. I think you stated that your men generally got about 24 days' leave in a year?—Yes.

6888. Are the men quite satisfied with that?—In the summer months they have each eight days as well in addition.

6889. Are you very particular about your men leaving the station?—We are.

6890. You do not allow them upon any consideration to go away?—Not without our special permission.

6891. And you fine them if they do go?—We do.

6892. With regard to hydrants, do you know if there are many private hydrants in Manchester?—No; I think there are very few within the premises.

6893. You cannot give the Committee the number?—I cannot.

6894. You do not think that they afford you any material assistance?—We should not use them; we should go to the public hydrants.

6895. Some of the large warehouses have a private supply, have they not?—They have, and hose fitted up upon their staircases.

6896. With regard to the hose, can you repair flaxen hose?—Quite easily; much more easily than leather hose.

6897. Do you know what pressure flaxen hose will stand?—I have tested it to 400 lbs.

6898. Have you ever tested leather hose?—Many a time.

6899. What would that stand?—Not much above 100 lbs.

6900. Sir *James Hogg.*] Are there not three reservoirs at Manchester?—Yes; the Gorton, the Denton, and the Godley.

6901. The one works with the other?—Yes.

6902. So that if the lower pressure is not sufficient you bring in one of the higher reservoirs; they are all joined together?—Yes, to assist it.

6903. Have you any idea of the size of the larger pipe?—Some of our larger mains are 40 inches in diameter.

6904. Near the church in the Cheetham Hill-road, what would the diameter

Mr. *A. Tozer.*
10 July 1876.

of the pipes be?—They would be about 12 inches; that is about the highest point of land in Manchester; I think we could not take you to one in Manchester much higher than that.

6905. They work one with the other; there are three reservoirs with constant high pressure day and night?—Yes; the collecting ground is at Woodhead. We have 17 reservoirs altogether, but three of them are used to supply the town.

6906. Can you tell me what the man who is on duty during night does during the day; does he always go to bed, or has he anything to do with the cleaning of the engines?—The man on duty at night, if we were not very busy, would go to bed during the day.

6907. But if you were busy you would call upon him to keep up?—Yes, to clean out the station, and do anything that might be required.

6908. So that it is not always that he gets the day in bed?—No, it is not; but we should not call upon him if we could possibly help it.

6909. But if there are duties to perform you would require the man to perform them?—Yes, in a reasonable way.

6910. At what time do you find sailors useful; you said there were times when you found them useful?—We find them useful in splicing and mending; they are very handy men generally.

6911. Do you think the young men who are not sailors learn their duties as well as the sailors?—Yes, I do.

6912. How many months do you think it would take to make a man fit to go with a fire-escape, or to carry a comrade?—I think that an ordinary labouring man would be fit to manage a fire-escape in 12 months.

6913. Do you think that you could bring them on quicker if you had sailors?—You might.

6914. In London we have men who become competent in two months; do you practice a man in carrying a comrade on his back down a ladder?—No, we do not.

6915. How do you make them show that they can carry down a person smothered with smoke; do you practice them in carrying a sack or anything of that sort?—We think that the drill we carry on would very soon show you whether he was competent to do it without risking his life or his comrades.

6916. We have been told that those hydrants which you adopt are liable to get gravel and other things into them; are you aware of that?—No, I am not; I do not think it has occurred more than half-a-dozen times since I have been in Manchester.

6917. But it has occurred?—Yes, it has occurred with us half-a-dozen times, but they are quickly cleaned out.

6918. Do not the police in London work very well with the fire brigade?—Always.

6919. So that it is not always necessary to place them under one head to make them work together in friendly unison?—They will be more likely to do so.

6920. But they do work so now?—Yes.

6921. Even under different heads?—Yes; I always got very great assistance from the police when I was in London.

6922. Mr. *Hayter.*] Would you describe the relation in which the fire brigade in Manchester stands to the police?—The fire brigade and the police are under the management of the watch committee of the City of Manchester. The police report through the chief constable, and the superintendent of the fire brigade reports likewise through the chief constable, so the watch committee meet the chief constable at the committee to receive the various reports of the different departments connected with that committee; at fires the superintendent of the fire brigade commands.

6923. They are, practically, under the same management as the police, are they not?—Yes.

6924. With regard to the hours of duty, you mentioned, in answer to an honourable Member, that a man was on duty 12 hours a day for a week continuously?—Yes.

6925. And that for the next week he would be on duty, and continue on duty, 24 hours alternately; was that so?—No; at the end of the first week his duty would be reversed from day to night; for the second week he would be

on

on night duty; after which he would receive his 24 hours' leave of absence, and when he returned off leave of absence he would again take day duty.

6926. Is he never on 24 hours' duty?—Yes, once in every seven days.

6927. You prefer to take recruits from all classes, do you not?—I do.

6928. But you consider a competent youth at 18 is a decided advantage?—Decidedly; preferable to a man of 30.

6929. May we take it that nerve and agility, and qualities such as the sailor's profession would be likely to foster, are absolutely requisite?—I think there is an advantage in it.

6930. You could not take a man whose nerves were at all shaky, could you?—No, we should not do so.

6931. That probably is the reason why sailors have an advantage if they are young?—Yes, they would have the advantage.

6932. They have been accustomed to climbing, and they have been under discipline?—Yes, and accustomed to keep watch and to be confined, which of itself would be an advantage; at the same time I do not agree with taking the whole brigade from sailors.

6933. You think it is a good class to recruit from, but not entirely?—Yes.

6934. Mr. *Young*.] Which is the reservoir among the 17 which you have stated there are at Manchester, which is the ordinary source of pressure for the fire brigade?—That at Denton.

6935. Is that one of the higher ones?—It is one of the middle ones.

6936. When you come to a fire do you constantly or frequently, or very infrequently, find that you want this pressure supplemented by any further pressure?—Only in the cases of large fires.

6937. Then it is not an every-day occurrence to want to supplement that pressure?—Not once a week; I should think it would be nearer once a fortnight.

6938. As I understand you, in answer to my honourable friend, you said that the men there and then can procure that pressure?—Yes, we have attached to each station turncocks, who understand the arrangement of the valves, and would turn on or increase the pressure as was requisite.

6939. How long would that take?—He would, perhaps, have to run some distance; it would depend upon the neighbourhood; it might be five or ten minutes, sometimes less.

6940. Then, in point of fact, you have not to send to the next reservoir to get it done, but you can do it upon the spot?—Yes, by changing the valves.

6941. Mr. *Hardcastle*.] Do you know the capacity of the reservoir in acreage?—The average quantity supplied in 1874 was 17,000,000 gallons a day, but the acreage I have not.

6942. Do you know the number of millions of gallons computed to be in the reservoir?—No, I do not.

6943. Has there ever been any shortness of supply in Manchester?—Yes, twice since I have been in Manchester; due to droughts.

6944. There are four reservoirs, I understand, from which there are separate mains passing through the town?—That is so; the Godley, the Prestwich, the Denton, and the Gorton reservoirs.

6945. Have you facilities at different points for joining the water in those different mains?—Yes, one to assist the other.

6946. So as to increase the pressure?—Yes, and thereby increase the pressure.

6947. Can that be done at various points so that you can readily communicate with the man who turns on the water in that way?—Yes, in different parts of the town; we take the man who has to do that to the fires; within the chief station and the station of the B district, there is a turncock residing.

6948. And at each one of those stations you can join all those mains in one if you please?—The turncock would have the means of doing so.

6949. Do you know what the maximum pressure would be that you could obtain by that means?—I do not know, but I should think 150 lbs.

6950. I wished to ask you one other question with regard to the charge made upon the owners of property on which a fire takes place; how is that assessed?—We charge all persons who are not insured for the services of the brigade, and

Mr. *A. Tozer.*

10 July 1876.

the fire insurance offices compound with the corporation for the insured portion of the property. It is done in this way; supposing a fire occurs in a large building in which there are a number of tenants, all persons having property within the walls of that building will be charged with the services of the brigade whether they are damaged by the fire or not.

6951. Upon what principle?—So much per cent. upon the value of the property.

6952. If the fire brigade is late in arriving at the spot, and the fire is put out before the brigade arrives, do you still make a charge?—No, there must be a *bonâ fide* service given.

6953. It was at one time the rule to make a charge in any event, was it not? Yes, but that has not taken place since I have been in Manchester.

6954. You stated that only two fires, totally destroying the property, have occurred since you were in Manchester?—I only recollect two cases on which the premises had been totally destroyed.

6955. In how many years is that?—From 14 to 15 years.

6956. That you think would be owing to the great facilities which Manchester enjoys for putting out fires?—Yes.

Thursday, 13th July 1876.

MEMBERS PRESENT:

Mr. Forsyth.	Sir Andrew Lusk.
Mr. John Stewart Hardy.	Mr. Onslow.
Mr. Hayter.	Sir Henry Peek.
Sir James Hogg.	Mr. Ritchie.
Mr. Locke.	Mr. Stevenson.

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

THE letter in answer to the letter of the Metropolitan Board of Works of the 23rd December 1871, was handed in by Mr. Lovell. 13 July 1876.

Mr. *William Swanton*, called in; and Examined:

Mr. *W. Swanton.*

6957. *Chairman.*] I BELIEVE you are the Superintendent of the Salvage Corps in London?—I am.

6958. How long have you been in that position?—Since the formation of the Salvage Corps in 1866.

6959. Before that were you connected with the fire brigade, as maintained by the insurance companies in London?—Yes, I was in charge of the western district of the fire brigade.

6960. Would you state to the Committee what position the Salvage Corps hold with regard to fires; do they work with the fire brigade, or are they distinct for all practical purposes?—They are quite a distinct force employed by the insurance companies with the view of saving loss or damage to insured property.

6961. Your work is practically to diminish the loss on property as far as possible where a fire takes place?—Quite so.

6962. But the Salvage Corps work with the brigade as far as the extinguishing of fire goes?—Yes; if an opportunity arises where we can do so, we should do so. We never ask the question whether the property is insured or not when we are assisting to save it from damage.

6963. When a fire takes place you attend at that fire for the purpose of doing what the force under you are able in saving the property from fire?—Yes.

6964. From your knowledge of the existing state of things, do you think that the protection to the town as against fire is satisfactory?—No, I do not indeed.

6965. In what way do you think that protection ought to be increased?—I think that there ought to be nearly double the number of engine stations that there are at least.

6966. You believe, I suppose, that as the putting out of a fire depends very much upon the rapidity with which you can bring the appliances against fire to bear upon it, so as you increase the number of places where the notice of fire can be given, and from which appliances can be brought for the purpose of extinguishing it, you increase the probability both of saving property and life?—That is my reason for saying that there should be double the number of stations.

6967. Have you considered how those stations should be increased?—Yes; I consider that the existing stations should not be anything like as large as they are, and that sub-stations should be established.

Mr. *W. Swanton.*

13 July 1876.

6968. What I understand you to say, first, is that you would advocate a very much larger number of stations than at present exist?—I would.

6969. Then I infer that you would say that those additional stations should be small, and not large stations?—Quite so.

6970. Do you mean small stations where engines should be placed, or where merely appliances such as hose, or otherwise, should be stationed?—Anything that would tend to extinguish a fire, whether a hose, hose-reel, or an engine.

6971. That brings me to another point. I suppose you would say that the water supply at present is not satisfactory?—I consider the water supply is very good, if we could only make use of it, but we do not.

6972. How would you propose to make use of the present supply of water better than we do under the present arrangements?—By the use of hydrants.

6973. You think that in order to increase your protection, and to be able to avail yourselves of the additional stations, the first condition is, to get a supply of water which you could use by the application of hydrants throughout the town?—The supply of water is already at our disposal if we could only use it properly.

6974. Do you believe that the supply which at present exists throughout the different companies could be available for the purposes of fire if hydrants were placed upon it?—I know many hundreds of mains about the London streets where hydrants could be placed, and where the water is quite ready for their use in sufficient quantity and pressure.

6975. Do you think that the pressure is sufficient to make those hydrants available for fire extinguishing purposes?—In the places I refer to the pressure is sufficient to give us a prompt supply of water for any purpose, whether you use a jet from the hydrants, or whether the supply from the hydrant is put into an engine and pumped on to the fire.

6976. Will you state to the Committee from your knowledge where those conditions exist under which, in your opinion, hydrants could be affixed to the mains?—I should say over at least two-thirds of the whole of London.

6977. That is upon the mains, not upon the service pipes?—I mean in every case the mains. I do not propose putting hydrants upon the service pipes at all.

6978. Even with the present pressure of the existing water companies you think that to two-thirds of London hydrants could be applied?—I am sure of that, from what I have seen of the plugs started upon those mains.

6979. Do you mean that the Committee should understand that from what you have seen of the supply of water, and the force with which it can be used for a given time, hose could be applied to hydrants if they were placed upon those mains?—Yes, I am quite sure of that; and apart from that, there will be a very great saving of water, which now runs away down the sewers.

6980. I quite understand that there would be a very great diminution in the waste of water in the use of hydrants, but I would ask you if you have heard the evidence of Mr. Bramwell or had your attention called to it?—I cannot say that I have, beyond merely seeing a newspaper report of it.

6981. In your opinion, if hydrants were placed upon the mains throughout the different companies districts in nearly two-thirds of the town, they would be useful for the application of hose to bring a jet to bear upon a fire?—Yes; apart from the question of saving at least half the quantity of water which is now wasted.

6982. And if the application of hose in the way you describe is possible, you would be able to utilise smaller stations, and thereby to multiply infinitely the places where calls to fires could be made, by placing at them the hose and apparatus for working at a fire before the engine arrived?—Yes, I think so.

6983. So that in that way a large number of fires would be stopped in their early commencement before becoming serious fires?—I am sure of that.

6984. From your knowledge, you are sure that greater protection could be given to the town from the fact of the diminution of serious fires by their being stopped earlier by the application of water from this hose?—That would be so naturally.

6985. Have you ever thought of the possibility of using the police stations and the fixed points where policemen are stationed throughout the town, as places where you could place the hose for that purpose?—If you go back to the question

tion of appliances and engines, and leave the water for the moment, I should say we should get a very large amount of help from fire-engines and fire-escapes being placed at the police stations. I do not propose that the engines and appliances should be placed at police stations which are in close proximity to fire-engine stations, but I am at this moment thinking of Stone's End in the Borough as an instance. From Stone's End in the Borough to the nearest fire-engine station, which is in Southwark-street, I should say the distance is nearly a mile. The next nearest, which is in Tooley-street, is very nearly a mile distant. The next nearest, which is in Kennington-lane, is certainly over a mile. If appliances for putting out fire in the neighbourhood of Newington Causeway were kept at the police station at Stone's End, I am quite sure that a great amount of good would result from it; and that a fire which might take 50 men to extinguish upon the arrival of the engines from these distant stations, would very likely be extinguished by five men from the police station.

6986. That is to say, the police station being nearer, the men and appliances could be brought to bear upon the fire more quickly?—I mean that the policemen should act as firemen for the time, and hold the fire in check until the fire brigade arrived.

6987. That leads to the question of whether you think that any amalgamation between the police and the fire brigade should be established; whether they should be worked together under one head, or whether they should remain as they are at present, distinct forces worked by distinct bodies?—I think that there should be two bodies, policemen and firemen; but seeing that we get so very much help from the policemen at fires, I think it would be very much better if the brigade had to do with the police, and not any other body.

6988. In your judgment, the fire brigade should be a separate branch of the police force?—Yes, quite so.

6989. That would enable you to utilise all the existing police stations as additional fire stations?—It would.

6990. You might go further even than that; I suppose, in that way, you could establish a system of police fixed points throughout the town, which would work with the police stations and fire-brigade stations, and thus multiply immensely the number of places at which you could have appliances for extinguishing a fire?—There are a number of places where the efficiency of the appliances would be at least doubled, if all the police stations were in communication with the fire stations, so that, upon a police station receiving a call to a fire, the policemen could go out and act as firemen for a time, telegraphing to the nearest fire station that the fire had occurred.

6991. Although the police have a distinct duty to perform which they could not neglect, namely, the preservation of order, there is always, I presume, a sufficient reserve of police who might be told off to extinguish a fire?—I have always found it so. I have seen before now as many as perhaps a dozen policemen clearing away a very small crowd, while only three or four firemen were hard at work. Now, if three or four of those dozen policemen could help the firemen, as a sort of auxiliary to the fire brigade, I think that fires might be extinguished very much more quickly, and the firemen's labour very much lessened.

6992. I understand, from the evidence which the Committee have had, that the police assist the firemen as far as they are able, after they have fulfilled their special duty of preserving order?—No doubt, but I do not know of any case, except the dockyards, where the police have any appliances of their own, which they can bring to bear upon fires.

6993. The advantage which you would attach to the joining of the police force to the fire brigade as a separate branch of it, would be the advantage in fact that you could place appliances in the hands of the police to be used by them before the arrival of the engines?—Yes, the firemen coming and arranging matters after the police had made use of their appliances. I do not mean that the police should be occupied in oiling and dressing the hose, but that they would merely take it out in the first place and endeavour to stop a fire near their station.

6994. The police could always attach the hose to the hydrants and get an application of water to a fire whilst the engine was arriving?—They could always do that, I think.

6995. And naturally tend very much to the prevention of fires becoming serious?

Mr *W. Swanton.*

13 July 1876.

serious?—Quite so; but while upon the subject of the police, I have two cases in my mind's eye at this moment; one at Rushey Green, where a fire engine is placed close to the police station, and again at Shooter's Hill, where I am told it is the intention to place a fire-engine station close to where a police station already exists. Now if my idea of the police keeping the fire appliances in the immediate neighbourhood of their stations is carried out, there would be no need of a fire-engine station at Rushey Green, nor of a fire-engine station at Shooter's Hill, and these remarks apply to many other parts of London.

6996. That goes to this, that while you have the fire brigade and the police under distinct authorities, you are liable to have that waste of power which you have described, by having two stations which might otherwise be worked at two points brought together?—There would be a great economy of power in that direction and much expense saved.

6997. I suppose if your idea should be carried out, and you could avail yourself as largely as you imagine you might, of police assistance for the purpose of the fire brigade, the necessity would not exist of so largely increasing the brigade as has been represented to be a necessity at the present moment?—No, I think we should rather see our way to diminishing the expense than to increasing it.

6998. In fact, by utilising the police stations, you might diminish the outlay of capital in building the fresh fire-brigade stations which were represented to be necessary?—Yes; what I meant by saying that the expense would not be as much as it is now is this, that at some of the present engine stations there are three, four, and five engines, all under one roof; if we were to take, say, three engines out of the four or five at those stations and put them about at the police stations, we should very soon have double the number of stations to do the work with the same plant.

6999. That would lead to our having the town divided into districts with the greater fire-brigade stations and with the reserve stations of the police and other fire-brigade stations scattered more widely through each district?—Quite so; it would not interfere with the present arrangement at all, at the same time I would connect by telegraph the police with the existing fire-brigade stations. I cannot see that any good is to be got by keeping a large reserve (which experience has shown us there is no need in doing) by keeping three or four engines at one station in one neighbourhood, while some portion of that neighbourhood is entirely left without anything to help it in case of fire.

7000. That is to say, if a fire takes place the engines, instead of being close to it, as they would be if scattered through the district, would have to come a longer way, and therefore would not arrive so soon as they would if distributed as you propose?—And by that time the fire would have gained a very great ascendancy. I find in that respect we are very much worse off in 1876 than we were in 1865, when the brigade was handed over to the Board of Works.

7001. You stated just now that the expense of maintaining the fire brigade might be reduced. Have you formed any calculation which you could give to the Committee with regard to that?—No, I could not unless I knew all the details of the expenditure; but I was going to say that, in 1865, when the fire brigade was turned over, we really had, which could be depended upon in the metropolitan area, 98 stations; to-day we only have 52.

7002. Is that from the plant having been concentrated since then?—Yes, there are larger bulks of it together now; all those parish engines and private engines have been abolished, from which we used to get very great help; and instead of having 98 stations, as I before stated, we have now only 52.

7003. And I suppose that number will be scattered over a very much wider area than the 98 stations were concentrated in before?—There is much greater distance between the 52 than there was between the 98.

7004. What I meant was, that the Metropolitan Board of Works area was a larger area than the area which was looked after when the fire insurance offices had the brigade?—I am not referring to what the fire insurance companies had to look after, but I am speaking of the engines and brigade stations which I know were in existence when the transfer took place.

7005. You refer to the parish and private engines?—Yes, all of which were very useful at times in their way.

7006. The number of them being, altogether, 98?—Yes, that is referring to effective

effective stations; there were a very great many more which we could not depend upon, but 98 stations might be relied upon as giving proper help when a fire occurred.

7007. Could you rely upon those 98 stations as being able to send to a fire with any rapidity?—Each of those 98 stations which I have given are in that sense; there would be, perhaps, another 30 or 40 which would not be worth taking into account.

7008. Under the present system I suppose you get a greater rapidity of action from the discipline of the force than you had under the old system of parish engines, do you not?—I cannot say that; the present discipline is very good, but it was equally as good in the old school under Mr. Braidwood.

7009. Did the men attached to parish engines live upon the spot?—In a great many cases they did.

7010. That brigade was carried on under a similar system to the existing one, practically, was it not?—No, the parishes were bound to keep engines and men to attend to them; and in a good many parishes about London they had some men who had left the brigade to do that work.

7011. From your recollection of the work at that time, would you represent that the engines came to fires as rapidly as the present brigade do?—No, I should not say that as to speed, but they were quick at fires near them.

7012. But still from their being more scattered over the town than they are at present, they were sufficiently rapid in their arrival at a fire, in your opinion, to meet the requirements?—They caused a fire in many instances to be extinguished with one engine from being nearer to the spot, whereas perhaps now it takes half-a-dozen to do the same thing from having a longer distance to come to the fire.

7013. The disadvantage of concentration would be this, would it not, that while you may get a greater number of engines to bear, they really come so late that they cannot put the fire out, and all they can then do is to prevent its spreading to other buildings?—They do succeed in putting it out. I have no fault to find with the brigade as a fire extinguishing body, but they have a larger fire to extinguish when they get there than they would if these intermediate stations were placed as I have suggested.

7014. That points to an increase of stations?—Quite so.

7015. And you believe that that increase might be made without adding materially to the plant, or to the expense of the existing brigade?—Yes. I am borne out in that when I see that at present the brigade have 115 engines and only 52 stations. If that 52 were doubled (let every station be content with one engine, or two in some cases), we should have double the number of stations, and double the quantity of help available without an increase of engines.

7016. And that is a help which would be available under the system which you have suggested, after you had brought to bear and used the appliances, such as hose, which would be nearer the spot where the fire broke out?—Yes, that would be so.

7017. Do you wish to represent anything more to the Committee with regard to the increase of plant and stations?—Those remarks which I made about increasing the number of stations, and reducing the number of engines kept at the stations as at present, have no reference to hydrant-posts being put about; and therefore I take it that in some places, say where a fire-escape is kept, if a fire-escape carried one or two lengths of hose only with it, if a fire occurred near a hydrant-post, it could make itself very useful in that way without any engine at all.

7018. That is the system which is adopted at Manchester?—Something like that.

7019. If you have finished with the question of increased plant, that brings me to a point upon which I wish to ask you a few questions more, and that is the question of hydrants. All this points to the necessity of applying generally hydrants throughout the town in order to make your hose properly available?—Quite so.

7020. As I understood you to state, that would be possible even under the existing pressure?—I speak from my own knowledge of what I have seen of the pressure.

7021. We have had it in evidence before the Committee that supposing the

Mr. *W. Swanton.*

13 July 1876.

domestic supply to be in course of being drawn at the time, or supposing a draught to be upon the pipe for different purposes at more than one point, your existing pressure would hardly give you any force at all at the hydrant, and that therefore a plug would be equally serviceable under those conditions as the hydrant itself; but that is not your opinion, as I understand?—No, certainly not. The hydrant would give all the water that the main could produce, whereas the plug at present wastes at least half of it.

7022. But when the plug is drawn the water is caught in a dam, in order to utilise the whole, so that that waste does not take place then?—Waste takes place so long as the engine or engines do not draw off as much water as is being given, and if from any temporary leaving off of the engine for any purpose (if there are, say, three plugs started upon one main, and only one engine is needed to be kept working, and the other two discontinued for a time), we have no means at present of stopping the waste from the other two plugs while the two engines leave off. If we had hydrants in each case, representing those three plugs, we could do just as we please with the supply; two could be shut off effectually, while the other one was being used.

7023. And, beyond the fact of the plug wasting water, the hydrant thus naturally gives you greater pressure?—Of course it does.

7024. But supposing the drain to be what the engineers have represented to the Committee, namely, so great as to make your hydrant practically merely an output of water, and not a jet, would you think a greater pressure ought to be given, in order to make your hose a useful instrument upon all occasions?—I am afraid, from all I have learnt and heard of this question of pressure, that some of the engineers are endeavouring to get a pressure which would cover a house, say, 60 feet high; and if we are driving at that, and nothing between that and 20 feet, I am afraid there is not a main in London which could always be depended upon to give that; but if we were to be contented with what we can get, sometimes 20 feet, sometimes 60 feet, and sometimes 80 feet, we should at all times have some pressure.

7025. That is what I want, from your experience, to learn; whether you think a hose would be serviceable upon the existing mains, with their existing pressure, to throw a jet upon a fire?—Upon an ordinary building always, and often upon an extra high building.

7026. Do you think it would, notwithstanding that there was a drain upon the main for the domestic supply going on at the same time?—I think that an answer in another form would answer your purpose. At the present time a turncock hears of a fire; he comes and starts the best plugs, and shuts off the services; if we had hydrants to use from the main direct, then, instead of his meddling about the plugs, he would go round and shut off the services that he knows are open, and while he does that our pressure through the hydrant is being so strengthened that we really would not want any turncock to supply the water, but rather to shut it off from running away while the brigade use it.

7027. It has been represented to this Committee that if a constant supply were given and hydrants placed upon the mains, the number of turncocks would be materially reduced?—I think it might be so.

7028. And that the fire brigade would still be at a loss when they came to use the hydrants, because they would be as ignorant as they are now of the drain that was taking place on the main, and the pipes that they ought to shut off to strengthen their supply?—But if we suppose that each main is being drawn for domestic service for only two hours out of the 12 we have the advantage of the constant pressure for the other 10.

7029. And you think that the brigade could be informed of the time at which the domestic supply was going on, so as to know when they could avail themselves by hose of the service of the main for the purpose of putting out a fire?—I do not think they need ask any questions about it. The firemen go to the hydrant and attach their hose as a matter of course, and would find the pressure sufficiently strong to use it without an engine; that is when all the services are shut off. Supposing some of the services are on, and they find the pressure weak, all they have to do is to turn the supply into their engine as they do now.

7030. That implies that the engine should be there as well as the hose; therefore,

fore, you lose the special advantage of the hydrant?—I have never supposed that we could do without engine power at every fire.

7031. But what you represent to the Committee is that you might materially assist that engine power by availing yourselves by hose of the water power, whenever it is at its proper pressure?—Certainly.

7032. And therefore that a great addition to the security of London could be obtained by putting hydrants upon the mains?—Certainly.

7033. You are not prepared to speak probably of the cost of laying down hydrants?—I know something about the laying down of hydrants, and I think there ought to be no difficulty in laying down hydrants good enough for the purpose, say for 3 *l.* or 4 *l.* a piece, with an additional outlay for breaking up the streets to fix the hydrants.

7034. I think you have on some other occasion given evidence about the great advantage of the flaxen hose which is used at Manchester as compared with the leather hose used in London. I suppose the leather hose would hardly be so useful at the police stations?—I think at the police stations as an experiment I would try the flaxen hose, but I am of opinion that the flaxen hose would not last so long, nor wear anything like so well as leather hose in London streets at least.

7035. With regard to the cost of flaxen hose, it is not so dear as leather?—It is not from that point of view that I am looking at it, but it is not calculated to stand the rubbing over the granite and macadam, and so on, as leather, I believe.

7036. It would stand the pressure as well or better than the leather hose, would it not?—It would stand the pressure as well at least.

7037. But it would be an advantage to you that one man would be able to manage it instead of two or three who would be required with a leather hose?—That would be an advantage; and that 100 feet of flaxen hose would take up no more room than 40 feet of leather hose, and be very much more easily handled, and without having to be coupled.

7038. And therefore if the idea were adopted which I suggested of fixed points about the town where the policemen on duty could avail themselves at once of the hose and other appliances, that would necessitate the use of flaxen hose instead of leather hose, would it not?—It would be better that it should be so.

7039. Is there any other point that you would wish to place before the Committee?—I should like to draw your attention to the fact that so much importance should not be attached to the question of property being insured as appears to have been placed upon it. I have taken the trouble to take out the number of fires, and the damage resulting from them, for the last five years. I find that at least four-fifths of the damages are either on property not insured at all, or that we could never ascertain whether the property was insured or not, owing to policies falling out, or something of that kind. I have always thought it would be so, although I had never tried it, but I have tried it now. Taking the total number of fires for the last five years, that is to say, excluding chimneys and alarms, the number was 7,986. The total number of damages in consequence of those fires, including that number of fires, was 10,201, leaving the uninsured property to figure at 8,206, which is really four-fifths of the whole, showing, I think, that engines are not always running about to protect insured property.

7040. That, I suppose, would be an argument as against any demand that might be made to increase the charge upon the insurance companies?—I think it works out in that way; I did it more for the help of the Committee than anything else, as it had never been taken in that way. I make it out that four-fifths of the whole property of London attacked by fire is not insured; that is, counting every individual who sustains a loss in the same manner as we count every individual who has a fire.

7041. With regard to the water supply, I should like to ask another question; do you think that it would be a great advantage to the town if the different companies' supplies were in any way united?—Some time ago I took a great deal of trouble to get some facts about that, and if the Committee can follow me to the neighbourhood of Hounsditch and Aldgate High-street, the East London Water Company comes, say, to the corner of Hounsditch on the one hand, and the

Mr. *W. Swanton.*

13 July 1876.

New River Company comes to the corner of the High-street, Aldgate, on the other; the one going due east, and the other north. If a fire occurs in the east London district, a little way down Aldgate, and the mains are shut off in consequence of repairs going on in that particular neighbourhood, the New River Company's water cannot be got to bear upon the fire because there is no connection between these two mains. If there were a junction there nothing could be easier, under the circumstances of repairs going on, than for the one company to communicate with the other and have this junction pipe open for a time; that does not only occur in the neighbourhood I speak of, but it is so in different parts of London where two companies join very nearly together.

7042. That is the idea of uniting the mains so as to enable the different water companies to assist each other upon occasions of fire which has been suggested, I think, by the insurance companies?—Yes, it was suggested by them. I have not the date of the letter with me, but I remember it was so.

7043. It was in a letter of 23rd November 1871, and the Metropolitan Board of Works, in the answer which they put in, refused to consider the question, saying, I believe, that the water companies had the means of bringing their supplies together and assisting each other in case of emergency?—That is so.

7044. But you think that it ought to be made a certainty, so that the different water companies' supplies could be united for fire purposes?—It ought to be so for all parochial or public purposes, and I believe the water companies have no objection to do it.

7045. Have you considered, to go a step further in that direction, whether it would be advisable that all the water companies should be placed under one system?—I do not think that signifies, because at present they all do their best for fire purposes.

7046. Are you aware that the pressures which the water companies are bound to give are very different?—That is so; but I know that during the last 10 years their pressure has nearly doubled what it was 10 years ago in a good many localities.

7047. But when you stated that the existing pressure upon the mains would enable you to avail yourself of hydrants over about two-thirds of the town, that represents a district which is not under sufficient pressure I suppose at this moment?—In placing the hydrants, to begin with, I would place them in the most favourable positions, where the water is acknowledged to be fit for hydrants. I would not go through a series of streets whether the pressure of water was strong enough for hydrants or not, but I would pick out the chief thoroughfares to begin with, and as the water supply improved in the second and third rate thoroughfares I would put them on there.

7048. You do not think there would be any advantage in bringiug the water companies under one body, so as to secure a similar pressure throughout the town?—I suppose that might be done, but my experience goes to show that the water companies have always been very desirous to do all they possibly could to supply water for the purpose of extinguishing fire.

7049. You think that under the existing system their pressures have so increased over that pressure they are bound to give, that you could avail yourselves of two-thirds of the metropolis, at present, for the purpose of placing hydrants upon the mains?—I am sure of that.

7050. And that so placed those hydrants would be available for fire purposes, and would give you greater security as against fire?—Quite so.

7051. Has your attention ever been directed to a scheme once suggested of a separate supply for fire purposes alone, as distinct from the domestic supply throughout the town?—I have heard that a good many times, but I see no reason why the existing supply should not answer every purpose.

7052. It was a suggestion of the late Mr. Easton for creating reservoirs around the metropolis which could be supplied by water companies, and from which you could lay mains distinctly for fire purposes throughout London?—I think it would be completely throwing money away, because at present there are plenty of mains and plenty of water if properly used.

7053. At present you are not of opinion that the present system could not be used for those purposes?—Quite the contrary; I am quite sure it could.

7054. With regard to the floats, are you in a position to speak with regard to certain

certain facts which have been placed before the Committee with reference to the time at which the floats were brought to bear upon a fire which took place at Rotherhithe?—I have the whole papers here which will confirm every word which Mr. Lovell stated the other day.

7055. Can you give the Committee the time at which the float came to work; a confirmation, in fact, of what was stated by Mr. Lovell?—Will you allow me to put these papers in, which will speak for themselves?

7056. Will you first give the Committee a summary of them?—The fire at the King and Queen Granary, Rotherhithe, is reported in the official report as having occurred at 4.50 a.m. I have here the official report of the Board of Works, dated the next morning, the 14th December 1871, in their own words, and with their own times stated. I reported to my committee, in consequence of that fire, that the first float to get to work upon that fire was an hour and 25 minutes late from the time the fire was reported.

7057. That is to say, from the time as appears in the Metropolitan Board of Works' Report of the commencement of the fire?—Yes; and that I know from my past experience is the best information we can always obtain at any fire; we hunt up the information from those who are on the spot; the best information we can get is put in this report; it always was, and is so now. Some doubt was expressed, I believe, on the part of the fire brigade as to the correctness of the statement of the late arrival of the fire brigade at that fire.

7058. Will you state to the Committee what you mean by the float being an hour and 25 minutes late?—An hour and 25 minutes from the time when the fire was reported.

7059. Was that the time before it arrived upon the spot, or before it began to play upon the building?—When its water was pumped upon the building.

7060. Mr. *Forsyth.*] Does that mean the time when notice was given at some station, or that some person in the street called out "There is a fire"?—I think that this time is taken from the first information that was received at the first and nearest engine station at Rotherhithe. The first float which had its water put upon that fire delivered its water upon the fire at 20 minutes past 6, or if you go a little further, 25 minutes past 6; that confirms my statement, that an hour and 25 minutes was taken up from the time the fire was reported till the time the float got to work; my committee doubted what I had said to them, and I was requested to prepare a report for the following meeting; I have with me the report I prepared, which I should be glad to be allowed to read; it is addressed to the chairman, and it says: "Sir,—The following will, I hope, fully remove any doubt which may exist as to the correctness of my statement on the 18th instant, in reference to the action of the floating engines at the fire at Rotherhithe. The call was received here at 5.20 a.m.; I at once proceeded to the fire with the trap from this station, and after making several unsuccessful attempts on my arrival to enter the granary from various points, and doing several things, including the personal supervision of clearing the granary counting-house, even to the telegraphic apparatus, I began to wonder when the floats were likely to get to work, as up to that time none had arrived."

7061. *Chairman.*] What time was that?—I did not state the time there, but I had done all this that I say I had done, and up to that time none had arrived; I had made every effort to get into the granary in various places, and fully half an hour had by that time been got rid of, but no floats had arrived; "I sent Rea, one of our intelligent men at this station, to look out for and report to me when the first float arrived, going myself to the river-side on one side of the fire (Rea going to the other)." I should say as I go on that I did that because I felt it was such a delay that there would be sure to be a noise about it, and therefore I had better be quite prepared about the details; "when I got to the water-side I noticed that the only float then in sight was that from the station at Rotherhithe, which was then being warped from below the fire and against the tide, by ropes made fast to barges opposite the fire; I wondered how this float came below the fire, seeing that her station was above it, and on inquiry was informed that some slip had been made, and having no propelling power, she had been allowed to drop a considerable distance below the fire, evidently from the effect of the tide, then about a quarter

Mr. *W. Swanton.*

13 July 1876.

ebb; I stood with Mr. Goodchild and Mr. Cooper, two of our foremen, looking at this float till it was finally secured and the hose laid on shore ready for work." I should tell the Committee that I stood looking at this float because I had nothing else to do. I could do no salvage work, and therefore I wished to make myself acquainted with the working of the float. "At this moment the barge, with two land steamers serving as a float came up from Millwall, and shortly after the large float from Southwark Bridge arrived. While Mr. Cooper and I were noticing the barge float being towed up towards the fire, Rea came up and told me that the Rotherhithe float was ready for work. I asked him the time, and he replied a quarter past six. I said, are you sure, and looking about for clocks to confirm his statement, I noticed that both the large clock on the wall of the granary, and that of a public-house close by were 20 minutes past six, and at the same time the turncock who stood by my side referred to his watch, and showed me that such was the time. No water had then been delivered by the first float to arrive. I have since ascertained that the clocks referred to were correct on the morning of the fire"; that is my own report to the committee, but that report to the committee is not made up solely from my own knowledge and experience on the occasion, but I have three independent reports here, one of which is made by the superintendent of the granary himself, Mr. Payne; he says, "In reply to a question from Mr. Goodchild this morning, I beg to say that I passed Rotherhithe Church at 10 minutes to six on the morning of fire. Walked to King and Queen; could not pass; returned to Surrey Dock Stairs; hired a waterman and rowed down; ordered and got men to remove my own and all craft then afloat, and landed at King and Queen Stairs at 6.15. The float was then being warped up from some distance below." She had not delivered her water yet at 6.15. "By direction of one of your officers I had my offices cleared of all books and papers, desks, &c.; by this time it was 6.30; to the best of my belief she was not working then. In answer to my inquiry one of the officers told me she was disabled." That is the report of Mr. Payne, who was a superintendent of the granary which was burnt, and who for want of something else to do was looking out to see when the floats did arrive.

7062. Was it low tide at the time?—It was about quarter ebb.

7063. Some time elapsed, I suppose, in getting the float out?—No; there was not so much time taken up in doing that as there was in getting the float into position ready for work, having been drifted down below the fire with the tide, or with whatever drifted her down. She had no propelling power to help herself to her position, and had to be warped back.

7064. Mr. *Forsyth.*] Which float delivered the water first?—The float at Rotherhithe, which was three-quarters of a mile from the fire, and was nearly an hour and three-quarters, according to this account, before she got to work.

7065. *Chairman.*] In consequence of what took place then the insurance companies urged upon the Metropolitan Board of Works to establish smaller floats, did they not?—They did; it was not only that the float herself was very late in getting to work, but the others were all equally late; it was altogether a most miserable getting to work of the floats.

7066. I suppose the large floats require a certain time to get their steam up?—I have no doubt they do.

7067. And that the advantage of the smaller floats would be that they could keep their fires banked up, and could get the steam up more quickly?—That is not the only point; I have seen these large floats get across the tide in the river, and although every effort has been made by those on board, they have had great difficulty in getting them to turn, owing to their great length.

7068. Practically, you think the end would be obtained better by a number of small floats?—I have no doubt of it.

7069. The Rotherhithe float, as I understand, had no propelling power; was that from its engines having broken down?—She has water propelling power, and something was wrong with the propellers, so that she had to be warped instead of propelling herself.

7070. But the advantage of the small floats, in your opinion, would be that they could be more quickly brought to bear upon a fire, and that therefore they might stop a fire in its commencement?—I see no reason why the same amount of money which has been spent in four floats, which have proved again and

again,

again, I was going to say, almost worthless, should not provide eight thoroughly efficient vessels, which could run about and arrive at a fire even before the land engines.

7071. You are not, I presume, able to speak from experience as to whether those small vessels would carry an engine and still draw sufficiently little water?—Yes, I know all about them; I have passed through it all, and know the facts about working them.

7072. You think you could get a sufficiently small draught with a small boat with the weight it would have to carry?—We have had estimates; and a float of this description that I speak of, drawing not more than 14 or 16 inches of water, could be bought for 1,000 *l.*; her fittings and gear would cost another 1,000 *l.*; so that a float of the kind I speak of, which would run about in any place (even if it ran on the shore it could not hurt, being so light), could be made for under 2,000 *l.*

7073. And could be available when the others are not available for a very long time?—The present steam floats take too long to get to a fire.

7074. Is there any other point with regard to this matter which you wish to place before the Committee?—The only other point, if I might be allowed to speak of it, is the non-existence of stations in places in which they originally were when the insurance companies had to do with the brigade.

7075. The Committee have had a good deal of evidence upon that point. I suppose what your evidence would tend to would be to strengthen the evidence of the gentlemen from the insurance companies who have already given us their ideas upon the subject, that from the insurance companies point of view, stations have been removed from parts of the town where the property in which they were interested is condensed, and placed more generally over the town to the disadvantage of the insurance companies?—I do not think from my knowledge of 28 years of service with them, that in placing those stations they ever studied or took into account what the amount of insurance was in the neighbourhood of those stations. I know their first thought always was that where the largest bulk of property was, perfectly irrespective of insurance, there the stations should be placed.

7076. That is what I meant by my question, that the insurance companies when they had the management of the brigade, placed the stations where the bulk of the property was concentrated?—Yes, and where an uninsured house might burn out an insured house.

7077. But when the fire establishment came under the charge of the Metropolitan Board of Works, they having a larger charge to protect over the whole area, took away some of those stations, and placed them further from that concentrated property?—The result is, that we have had some large fires in the neighbourhood of the places where these stations have been removed from.

7078. Do you think those fires have not been so well attended to, in consequence of the removal of those stations, as they would have been under the old system?—Quite so. There has been a good deal of delay in attending to them, which would not have occurred if they had remained in the old places.

7079. Wellclose-square was one of those stations, and the Commercial-road was the place to which it was removed?—Yes.

7080. Can you speak about the difficulty of getting an engine out from Wellclose-square as compared with Commercial-road?—Yes; I know there were some difficulties in that way, but there have been some points which have not been brought before the Committee yet, in connection with those stations, and one most important point is, that when those stations have been placed for many years in one spot, they become a sort of land-mark to everybody; and when a fire occurs, the merest child knows where the station is, and everybody runs to the spot at once.

7081. But as time passes on, the Commercial-road station practically will become a land-mark too?—That may be so; still I cannot but think that it was unwise to take the whole of the help away from Wellclose-square. If some provision had been made in the neighbourhood close by, it would have been better.

7082. Are you able to place before the Committee any evidence showing that fires which may have taken place in that particular district, have not been so rapidly attended by the engines placed in the Commercial-road as they would have

Mr. *W. Swanton.*

13 July 1876.

have been under the old system from Wellclose-square?—The Commercial-road station has been hardly established long enough to prove that, but I will take the station in Wells-street, Oxford-street, as an instance. There used to be a station at Well-street, Oxford-street, and another at Crown-street, Soho, both of which held most commanding positions for Oxford-street and Tottenham Court-road, and all that large bulk of property about there, quite apart from the question of insurance.

7083. Where have those stations, when discontinued, been removed to?—They have been abolished entirely, and a station to compensate for the removal of those two was built at the upper end of Portland-road, leaving Oxford-street and Tottenham Court-road greatly without protection, as compared with what they had been accustomed to.

7084. In speaking of that question, have you any details of fires which have taken place in that district, as showing that the removal has been the cause of delay in the arrival of the engines?—The Wells-street station was removed in 1868, and the Crown-street station, Soho, in 1870, and since those dates we have had 16 very serious fires, which I believe would have been represented by very slight damages had these stations remained where they were.

7085. Have you a distinct history of any of those cases with reference to the time which it took for the engines to arrive at those fires?—No, I have not taken a note of that. I have only notes showing that there was considerable delay as to what we were originally accustomed to.

7086. Did you take the distances as between those fires and the new stations and compare them with the distances between those fires and the old stations that were abolished?—In the former case of Wells-street and Crown-street, you may take either Oxford-street or Tottenham Court-road as you please, for half a mile up, and the station in each case would not be more than half a mile away from a fire under the old system.

7087. What would be the distance under the new system?—Now the distance is nearly a mile.

7088. So that practically those fires were all at a disadvantage under the new system?—Yes.

7089. Which fires would you refer to in particular?—I told you previously that the Wells-street station was removed in 1868, and that the Crown-street station was removed in 1870, and I then began to report the fires which suffered in consequence of these removals. The first is upon the 13th of January 1871, at Edwards and Roberts, furniture dealers, Carlisle-street, and Chapel-street, Soho.

7090. Is that the one you refer to as being half a mile further than it used to be from the station?—That fire I should think suffered to the extent of three-quarters of a mile difference; the next fire is upon the 2nd of February 1871, at Castell and Brown's, confectionery store, 4, George-yard, Soho. That in like manner suffered to the extent of three-quarters of a mile difference. The next is upon the 27th of April 1871, at J. Muggeridge's, corn dealer, Howland Mews, Fitzroy-square; that I take it has not suffered but to a small extent, say a quarter of a mile. The next is upon the 28th of April 1871, at Messrs. Heal & Sons, upholsterers, Tottenham Court-road. That suffered to the extent of more than half a mile of difference, and was a very serious loss, entirely owing to the removal of those two stations.

7091. You have given the Committee the principal ones probably?—Yes, I mention them only to confirm the facts stated.

7092. You mention those cases to confirm what has been stated by the witnesses for the insurance companies before, that in their opinion districts have been prejudiced by the removal of stations which have been placed over the town?—That is so.

7093. What is the total number of such fires that you have in your list?—Sixteen in that locality.

7094. With regard to those two stations?—Yes; with regard to those two stations only.

7095. Will you hand in that paper?—(*The Paper was handed in*).

7096. You have now mentioned two of the stations; were there other stations to which the same remarks would apply?—Yes. I next come to Farringdon-street, where considerable damage has been done in consequence of the removal of that station.

7097. Have

7097. Have there been many fires in that district in which you think the public suffered by the removal of the station?—There are six fires which were all more or less very serious, implying many more damages besides the buildings in which the fires occurred. Six other damages at one place burnt out, and eight other damages at a second; severe damage to other buildings in another case; at the next, 12 other damages, and at the next, 16 other damages, and at the next, 10 other damages.

7098. Mr. *Stewart Hardy.*] What do "other damages" mean?—That the fire began at one place, and burnt into 16 or 10 other places, as the case might be.

7099. Mr. *Onslow.*] Does that refer to damage from fire and water both?—No; this would refer to fire damage only.

7100. *Chairman.*] Are they all instances in which in your opinion they were prejudiced by the removal of the station?—If I may say so, I feel sure of it.

7101. You know the distances probably in one or two of those cases?—Take Lloyd's Printing Office, in Salisbury-square, Fleet-street. There is a difference of fully three-quarters of a mile in that case for any help which was brought to bear upon it. In another case, in Nag's Head-yard, Leather-lane, the difference of distance would be half-a-mile. There is another case in the Broadway, Ludgate-hill, where a most serious fire occurred the other day, with 16 other damages, in consequence, I believe, entirely of the removal of that Farringdon-street station.

7102. I suppose you mean that the chances of extinguishing the fire would have been much greater if the station had been retained on its former site, in consequence of the engines being more quickly on the spot?—They would have been there very much more quickly, and I believe the fire would have been held in check, but as it was the whole building was burnt down.

7103. Will you hand in that Table?—(*The same was handed in*).

7104. I suppose the Committee may take it that with regard to all the stations which had existed under the old fire brigade in places where property was densely collected together, the removal of those stations did prejudicially affect the property?—There can be no doubt of it.

7105. Giving the removal of the Farringdon-street and the other two stations as specimens of the way in which they have been affected?—Yes.

7106. An honourable Member wishes me to ask you whether you can state the number of fires within your own knowledge which have occurred in the district surrounding the new stations which have been assisted more materially by the engines from those stations than they would have been; that is to say, taking the reverse of the position you have placed before the Committee; the engines being placed as they are instead of being placed as they were?—I have no entry of that, but it is a fact, notwithstanding, that very few fires have occurred in the neighbourhood of those new stations.

7107. But in this instance you have spoken of certain fires which have been prejudiced by the removal of the stations, and you cannot show, of your own knowledge, any fires that have been benefited by that removal?—I have not any account of that.

7108. It is quite possible that there may have been fires which have been benefited by the change of position?—Of course.

7109. That would tend rather to show that the number of stations should be increased?—Quite so, but the idea of placing fire-engine stations in crowded thoroughfares is exactly upon the same principle as having a number of policemen in crowded thoroughfares; they are more likely to be wanted there. You would not put an engine station in a suburb with the expectation that many fires would occur there because there are not many buildings for fires to occur in as compared with buildings in a crowded thoroughfare or a crowded neighbourhood.

7110. But the insurance companies fixed upon the sites they thought most eligible, and having done so feel prejudiced by the removal of those stations?—They would naturally feel that, having had considerable losses to pay in consequence of the fires I have referred to.

7111. Which the fire insurance offices consider they would not have had to pay if the old stations had remained there?—Which, like me, I suppose they know they would not have had to pay if the old stations had not been removed.

Mr. *W. Swanton.*

13 July 1876.

7112. Mr. *Ritchie.*] Were you present at the fire at the Pantechnicon?—I was.

7113. Do you know how long the engines were before they arrived at that fire?—The first engine that arrived was a volunteer fire-engine.

7114. Do you know why it was that a volunteer fire-engine was the first to arrive?—Because it was placed as a station close to the Pantechnicon.

7115. And it was at that station that the first alarm was given?—It was.

7116. Did that engine get to work when it arrived there?—I do not think so.

7117. Were you present when that engine got there?—I was busy inside the building, and I did not see when it got to work; but I know that the brigade engine from Pimlico came up almost as soon as that engine did, and it got its hose out, and as the plug was required for one engine the private engine was moved out of the way to make room for the public engine.

7118. Were you there before the brigade engine?—Not before the brigade engine that I speak of.

7119. Then you cannot speak as to how long it was after the outbreak of the fire that the brigade engine got there?—I cannot; but I may say I attach no blame to the brigade in regard to that fire.

7120. I refer to the effect of the closing of the Sloane-square station upon the fire at the Pantechnicon?—I believe, had the Sloane-square station been in existence when the Pantechnicon fire occurred, it would certainly have been the first engine to come up and be at work.

7121. You stated that you were not able to say how long it was after the outbreak of the fire that the first engine got there?—They were all there very rapidly; there was not much time lost about any of them getting there after the received information.

7122. Do you know whether that brigade engine got to work upon that fire within half-an-hour of the breaking out of the fire?—I should say that the engine got to work within a quarter-of-an-hour of the breaking out of the fire.

7123. Do you know that personally?—I was busy, but I saw them all doing that which was requisite.

7124. After you came?—They must have been there in good time, for I had to go all the way from the City to get to the fire, and I saw a good sprinkling of them when I got there.

7125. How long did you get there after the fire broke out?—We started as soon as the call was given.

7126. How soon was the call received after the fire broke out?—I should say within 20 minutes of the outbreak.

7127. You are speaking entirely from memory, I presume?—Yes.

7128. You state that double the number of stations, in your opinion, might be added without adding to the expense of the brigade?—Yes, and I do so in this way: I find in going through the entire list of brigade stations, and the engines they have at those stations, that when I have left each of those stations with a proper amount of help for the neighbourhood in which it is placed, I have a surplus of 35 engines to put somewhere, and if those engines could be put where I have suggested, of course that does not mean spending more money for fresh engines.

7129. But I suppose it would necessitate building more stations?—No, not if the appliances are put at the police stations and such places as I spoke of.

7130. Is there accommodation at the police stations for holding these large manual engines?—In a good many of them there is.

7131. Then of course when you say that you could increase the number of stations without adding to the expense of the brigade, you mean if the duty at those fresh stations was done by the police?—I should not go so far as that; I should say that the police would agree at once to an engine being placed there, and their men being taught the use of it.

7132. That is to say exactly what I say. You assume that if these engines were taken away from the brigade stations, where there are more than one or two engines, they would be put at the police stations, and the police would work the engines?—Yes, until the arrival of the brigade to take the matter up for themselves.

7133. Of course in that way one would understand that it would not add materially

materially to the expense of the brigade, because you would make the policemen firemen?—Only in the same way that strangers, if I may call them so, would rush into a burning building now with a pail of water; only in that sense to keep the fire in check for a time till the proper brigade arrives, they having at the same time telegraphed instructions to the nearest station to bring an engine on.

7134. Do not you think if they had some powerful hand pump at those police stations which could be brought to bear at once upon a fire that could be made to answer the purpose?—That would be better than nothing, but it would not be so efficient, I take it, as utilising some of those surplus engines.

7135. But you would require to have men to work the engines?—Not in that case; I should like to go back to my former illustration of Stones End in the Borough; we should never be without, I suppose, 20 or 30 single men at home in the place; they would ring a bell for a fire in the neighbourhood, and they would get out the engine and run it off. I do not propose that they should run it a mile, but only for the protection of the immediate neighbourhood of the police station.

7136. But are not some of those engines you would remove from the existing stations much too large to be dragged by men?—If they are much too large to be dragged by men, do not remove them, but leave them there for horses to drag about.

7137. Is it not the case that at those stations where there are two engines, one is a steam, and the other is a large manual?—Yes.

7138. If that is so, a large manual would not be available for the purpose you speak of?—I do not speak of a large manual engine, but as a matter of fact they happen to be all small manuals now; they are that kind of manuals which we used to run about by hand, with four or five men, very easily indeed. I would have the steam engine at the station for the horses to drag about, transferring the manual to the police station for the police to run about by hand.

7139. You would also suggest in that way, that the duties which the men have to perform at the brigade stations would be very much diminished?—Yes, and I think the fire would be very much diminished when the brigade arrived, seeing that the police had checked it in its infancy.

7140. You know a good deal about the fire brigade, from having been so long associated with it; do you consider the number of men available at night for the protection of London is too small?—That carries me back to my first suggestion, with reference to splitting up these large stations.

7141. But supposing the existing state of things were to remain; supposing the various numbers of men at the brigade stations should remain there, I would ask you if the number of men now in the brigade are sufficient for the protection of London, or for all the duties which have to fall upon them?—If all the existing stations and the arrangements are to remain as they are, I think the strength of the brigade should be increased by 100 men. I think you should have a man for every fire escape, he being now taken from the strength of the brigade.

7142. But we are told that it requires three men for two fire escapes?—If I am to found my opinion upon the old way of doing things, they had never formerly more than one man to manage one escape.

7143. But they must have an extra man for relief, and so on?—That may be so, but not to the extent that you suggest.

7144. But whatever number of men are required to work the fire escapes, there ought, in your opinion, to be that number in addition to the existing number in the brigade?—I am quite of that opinion.

7145. Is it your opinion that the men in the brigade at present are considerably overworked, and that the complaints which have been made, judging from your intimate association with the brigade, are justifiable complaints?—If we are to give an opinion about that as by the side of a mechanic who goes to his work in the morning and works all day, and then goes to bed all night, I should say they are considerably underworked. Take my own people, for example; they have as much work to do as the brigade people, because we have to do as much watching now as used to be done by the old brigade, but I find upon the average that my people would get eight hours work, eight hours sleep,

Mr. *W. Swanton.*

13 July 1876.

and eight hours smoking their pipes, and so on, at the stations. I do not think the brigade are actually at work more than that.

7146. The evidence given before this Committee was that it was not that the men complained of the amount of work, but of the great amount of duties they had to perform, and the liability to remain upon duty for a continuous number of nights without being able to go to bed; do you know whether that is so?—If a man's duty consists of lounging about reading the newspaper, and so on, I really cannot see very much hard work about that myself; I have gone through it myself, and therefore I can speak of it.

7147. Do you know from your own knowledge whether men are able to get much away from the stations on leave, or anything of that kind?—I do not know how that is managed, but I think my men have all the leave they require.

7148. Have you a superannuation scheme in your brigade?—Yes, we have; I have a copy of it here. (*The same was handed in*).

7149. You are of opinion that there ought to be a superannuation scheme for the fire-brigade men as well?—Quite so.

7150. Are the duties which the fire-brigade men perform such as are likely to injure their health:—Yes; the service of the brigade requires men of very strong constitution, to continue in it any number of years.

7151. Your opinion is that the men break up more rapidly than men in other employments?—Yes; from the continuous heats and colds that they are subject to; for instance, a man goes into a burning building, where he gets into a great perspiration, and then the next moment has a cold branch turned on him.

7152. Do you think that the fire-escape men should be kept on duty during the day?—Yes, to a certain extent; but we do not have so many fires during the day as we have in the night, so I should not press that as a matter of actual necessity.

7153. If you had the escape men on duty by day as well as by night, you would require a still greater number of men to be added, would you not?—Yes, not double the number; but I think there would be no harm in having a few escapes about by day, say it might be a fourth of those at night.

7154. Have you any difficulty in getting the number of men you require for your brigade?—No, I can generally get plenty of them; I get many of my men from the brigade.

7155. I suppose you offer superior advantages to the brigade?—I dare say that our pay and advantages are better, and I am glad to get them.

7156. What is the number of men in your brigade?—We have had 126 altogether; of those remaining from the old staff, 58; we have discharged 25; 10 have died; 19 have left for better situations, and two have been pensioned.

7157. How many men have you in the brigade at this moment?—Sixty-four.

7158. How many stations have you?—Four only.

7159. *Chairman.*] All those within the fire-brigade district?—Yes; one is in Watling-street, the chief station; one is in Southwark Bridge-road, just on the other side of Southwark Bridge, from the City; one is in Marlborough-street, not very far from Regent-street; that is to say, in the A. District, and the other, making up the four, is in the C. District, nearly opposite the fire brigade station in the Commercial-road.

7160. Taking the duties of your men, they have a station duty to perform that only requires four men if there are only four stations, I suppose?—Most of our men's time is taken up in being in charge of premises where fires have occurred as watchmen.

7161. Are you in telegraphic communication with the fire brigade?—Only in Watling-street, where we have a bell communication.

7162. Are your own stations in communication with each other?—All our own stations are in telegraphic communication with each other.

7163. Mr. *Onslow.*] According to your system of working the brigade by the police, do you think the present force of police would be sufficient?—Yes, I think so, because I do not propose setting the police apart for the purpose of acting as firemen. I am only supposing that a fire should occur in the neighbourhood of a police

a police station, and that we had, say a dozen policemen in bed, or at home in the daytime, just upon the spur of the moment they would be turned out to attend a fire, and when they have done that they go back to their station and have nothing further to do with the fire after the brigade arrive.

7164. Do you think there would be any necessity for training the police for that duty?—Yes, I think that men from the brigade should teach them the use of a fire-engine.

7165. But do you think that they should be taught the climbing part of the business?—As a general rule, fires occurring in the immediate neighbourhood of a fire-station have not about them that necessity for climbing, because for instance, if a fire breaks out in the upper part of a building, being attended to early, the chances are that you would be able to get up the staircases and require no climbing; and if upon the lower part, or upon the basement, there would be no climbing required. It is only when a fire has been burning some time that climbing would be required.

7166. You talk about the police dragging about these manual engines. How many strong men do you think it would take to drag this manual engine?—I have been one of two to do it.

7167. And they would then have to run perhaps half-a-mile?—I should not like a man to have to go half-a-mile and then begin to work, because when he began he would be too fatigued to do much good, but I think that if they were limited to a distance of about a quarter of a mile from their stations great good would arise from that.

7168. I do not know whether you know much about athletics, but I can tell you that when having to run a quarter of a mile with a manual engine, and then having to work the engine, would be almost superhuman?—I have done it many times.

7169. Do you mean to say that you have run with an engine a quarter of a mile, and then worked the engine efficiently?—Yes; I should have been more efficient without the half-mile run, still I have often done it.

7170. Now you say a half-mile run?—Yes, but not in the majority of cases, being only of two. Sometimes there would have been three or four men.

7171. I presumed you were talking about being one of two?—But I am speaking about running about the City by night. I have been many times one of two to do it then quite unaided.

7172. An honourable Member wishes me to ask you how many stations there are with five engines, and how many with four?—There is one with five engines, and that is the chief station in Watling-street. The whole of the other chief stations have three, and a good many of the others have two.

7173. I understood you to state that when the fire-brigade men arrived the police would be relieved?—Yes, they would then resume their own duties as policemen.

7174. And those fire-brigade men would come upon the steam fire-engine; a steam fire-engine would bring sufficient men to work their own engine, and the manual, so as to relieve the police; I presume that is what you mean?—I presume in the majority of cases it would prove that the police have so far kept the fire in check that there would be no necessity for the services of the brigade.

7175. How would the brigade arrive?—They would arrive upon the steamer, or in any other way. I am assuming a shop being on fire, and the police beginning at once to work upon it, and when the brigade arrived they would have very little to do.

7176. I understand your remarks to apply solely to small fires; you think that the police would prevent large fires taking place?—Even a hydrant with a single length of hose, or a pail of water at the right moment, would prevent a fire frequently from becoming a large fire.

7177. Is it your opinion that it must be a very expensive matter to give London an efficient fire brigade, considering the badness of the supply of water at the present time?—My own opinion is that there is already money enough spent upon the brigade, and that it ought to find all the help we require.

7178. With the present supply of water?—I think the supply of water is quite beyond the question; it is astonishing what a quantity of water there is at our disposal for fires, if it could only be properly used.

7179. The honourable Chairman asked you a question with reference to the

Mr. *W. Swanton.*
13 July 1876.

amalgamation of the water companies; have you ever made an estimate of what that would cost?—I do not see the need of going into that, seeing that every water company at the present time seems to endeavour to outdo the others in giving a better supply as time rolls on. I know of no water company which does not cheerfully, of its own will, improve its water service every year, and therefore perhaps the various water companies are doing better for us in that respect than one large company could or would do.

7180. You approve of the present system of water supply?—Most certainly I do.

7181. Of the existing system under the eight or nine different companies?—I think if the companies were allowed to unite with each one, by junctions at favourable points, you would have all you want, and then you would have really the same result as you would have supposing the water companies were bracketed in and made one company of.

7182. And you see no inconvenience in those different companies, according to their different Acts of Parliament, supplying London with different pressures?—No, I see none at all. I do not know whether it would be possible for some of the companies to supply the pressure that some would require of them against their means of doing it, but from the nature of the buildings in London, generally speaking, the pressure in most cases is enough for present purposes.

7183. For fire-brigade purposes?—For fire-brigade purposes. About the only place I could speak of to which that remark does not apply is by the waterside; say at Rotherhithe and Bermondsey, and there the wharfingers and people do not require water for domestic purposes, and there is only a small main laid on; nobody pays for it, and the water companies will not of course lay down larger ones.

7184. I think we have had it in evidence that in some places in London the pressure is only flush with the pavement?—That would be owing to some very exceptional circumstances, I suppose. You would get that result, I suppose, at some time when all the services were on for domestic use.

7185. But still that is the case, is it not?—Under the circumstances I speak to, that is the case.

7186. That is not a very good supply for fire-brigade purposes?—It is not.

7187. How many floats do you think would be effective for river service in London?—I should like to see about eight from Westminster Bridge to Woolwich Arsenal, placed at a proportionate distance from each other.

7188. Upon either side of the river?—I do not think it signifies which side they are so long as they are so placed that they are able to run across to the other side.

7189. What kind of vessel do you think would be most suitable?—The kind of vessel would be that which you see everywhere now about the river, which can go in and out, and start in a moment without any preparation.

7190. How many men would it require to work a float of that description?—Two in a general way, but three at a fire; that is to say, one engineer in charge of the engine, and one steering, keeping her out of trouble until she gets to her position, and then I take it that when they got to a fire one man would no longer be required to steer her, and he could use the branch until further help came to them.

7191. How soon do you think a float of that sort could get up steam and be under weigh from the time of receiving the call?—Certainly within five minutes.

7192. Do you know the average time it takes for a large float to get under weigh?—I do not know.

7193. As a rule I gather from your evidence that you think floats are late in arriving at the scene of a fire?—That is so.

7194. Have you considered the subject of moving the head-quarter station from the north to the south side of the Thames?—I have, and I think it would be a most serious thing to entertain the thought.

7195. Do you approve of the position of the Watling-street station?—I do, in consequence of the large quantity (not of insurable property so much as) of burnable property in the immediate neighbourhood of Watling-street.

7196. The present situation of Watling-street is somewhat a crowded thoroughfare, is it not?—I do not think so; the whole of the neighbourhood has been very much improved; and if we could get about from there 10 years ago, we can get about from there very much better now.

7197. But

7197. But there are omnibuses frequently passing down the street, are there not?—Very seldom indeed down Watling-street; it is only when the asphalte is in a dangerous condition in Cheapside that they pass that way as a sort of by turning.

7198. That would be very often the case in the winter, would it not?—Upon the average I suppose you would not find one omnibus coming through Watling-street for every four hours in the day.

7199. I was there not very long ago at night, and during the time I was there two omnibuses passed down?—During that time, no doubt, the asphalte was very slippery. If you had come there another eight or nine nights, and the asphalte was not in a slippery condition, you would have found the omnibuses did not go that way at all.

7200. But Watling-street is somewhat narrow, is it not?—The upper part of Watling-street is somewhat narrow, but where the brigade station is it is the widest part of it, quite wide enough; they keep all the engines at the station, and do all the washing at the other side of the street, and yet the traffic goes between the two.

7201. Do you think the present station is large enough for a head-quarter station?—I do not know what you require for a head-quarter station; I think there should not be less than six or eight men and a couple of engines.

7202. For a head-quarter station?—Yes; that carries me back to my suggestion of splitting up the stations. I think if you had six or eight men available at Watling-street, with two engines, it would be quite enough.

7203. That is to say, you would have fresh stations built nearer Watling-street than at present?—I should; there are numbers of places about there; for instance, just up Moorgate-street from the Bank would be a most useful place for a station; just up Aldersgate-street, by the Post Office, would be another; by Temple Bar another, and Farringdon-street retained.

7204. Are those police stations which you are alluding to?—No, they are spots, I think, where, at the present moment, it would be very desirable to place engines.

7205. If those stations were built there would not be any great importance attached to a head-quarter station?—I do not mean that there should not be a head-quarter station. Of course, I mean that there should be, but I do not think a large amount of machinery and a large number of engines should be kept at any station.

7206. May I ask what you call a proper head-quarter station?—A station that would have proper offices for the chief officer and everything that was required for it, because I can suppose there will be many things done at the chief station which would not require to be done at the subordinate stations.

7207. Is it in your power to give the Committee an estimate of how much property has been saved by the removal of those stations to which you have referred, so that we may compare it with the amount of extra damage which you say has taken place on account of the removal of those fire stations?—I do not think it would be possible to get that information from any source in London, even from the companies.

7208. Therefore the information you have put before the Committee is rather one-sided, is it not?—No, I do not think so. If a large building is burnt out, as against a large building being slightly damaged ten years ago, it answers for itself that it is in consequence of the removal of the station.

7209. Surely it is one-sided if you do not take what has been saved by the new stations?—It is the fact that very few fires have occurred in the immediate neighbourhood of those new stations; they may however do so at some time or other, but they have not up to the present.

7210. I wish to ask you about your own men. Do all your men live at your own stations?—As near as we can get them. If we have not apartments for them all we insist upon them living in some near place which we approve of; sufficiently near to be called out and go with the carriage when wanted.

7211. But some of your stations I gather have married men and their children there?—Yes, we have an equal number, but in our place the majority of the men are married men.

7212. You have had great experience in this matter; I would ask you what your opinion is of recruiting the Metropolitan Fire Brigade wholly from the

Mr. *W. Swanton.*
13 July 1876.

class of sailors?—I must tell you that I was a sailor myself, or spent ten years of my life at sea in Her Majesty's service. My knowledge of a sailor and his mode of doing things leads me to know that a man who has been drilled to proper discipline, cleanly habits, and who is smart and active in getting about, is a far better man for a fireman than the raw material that you have to drill in and through all that.

7213. I presume you are right as regards Her Majesty's service; but there is not very much discipline in the merchant service, is there?—We do not find that the merchant seamen answer our purpose so well as Her Majesty's seamen do.

7214. You do not agree with Captain Shaw when he thinks the merchant service man the best?—I certainly do not, for the reasons I tell you.

7215. Sir *Henry Peek.*] You say that you have had 28 years' experience?—In November I shall have had 28 years' service as a fireman, without any intermission.

7216. What has your experience been; how did you begin?—As an ordinary youngster, in the lowest grade in the brigade.

7217. In the brigade of the old companies?—Yes.

7218. Were you transferred to the Metropolitan Board of Works?—Yes, I was with them I think about three or four months only. My appointment was made out; the companies had selected me for the post, but I knew nothing of it until I had been transferred to the Metropolitan Board of Works about three or four months.

7219. Your service has been continuous for 28 years?—It has.

7220. Can you tell the Committee what the cost of the Salvage Corps is?—I should think you may take it roughly that the expenses of the Salvage Corps are about 6,000 *l.* a year.

7221. Is that expense entirely borne by the insurance companies?—Entirely.

7222. They do not have any subsidy or any help from anybody?—For the first two years of the Salvage Corps' existence we were in the habit of charging uninsured persons for sevices rendered to uninsured property, but that practice has been discontinued for eight years, and we do not charge, nor have any income of any kind, from any other source than the insurance companies.

7223. Did I understand you to state that you do not inquire whether the property you try to save is insured or uninsured?—We never ask the question until all the work is done, and all is saved that can be saved. We then begin to inquire, where is this property insured?

7224. Then, it appears that the insurance companies pay four-fifths of that money for a purpose which does not concern them in the least?—They do a very great deal of work for uninsured persons.

7225. Who do not subscribe at all?—Yes, who do not subscribe at all.

7226. Nor does the Government nor the Metropolitan Board of Works?—No.

7227. In addition to paying a large portion of the fire-escape charge, they pay all this service out of their own pockets?—That is so. Last year I stated that the expenses were 6,000 *l.* a year; that is, for working, the wear and tear of the whole corps, less special watching at night for special purposes. Say, a place is burnt out insured in some office, after the fire is done with, and the watch is set, that watch is continued at the discretion of the surveyor for the office, and all the while that watching is continued a special payment is continued for that watching: therefore it would not be fair to put that in with the working expenditure of the Salvage Corps proper, and that brought the expense of the Salvage Corps up last year to 10,863 *l.*

7228. But you would not watch property that was not insured?—No; as soon as we knew that a house was not insured we should withdraw from it altogether.

7229. If you had two buildings, one insured and the other not insured, you would go to where the interests of your employers were concerned naturally, would you not?—No: we should not have an opportunity of doing that; we have to save the property. If a particular parcel of property was not insured, we should be very likely to be saving something very near to it which was insured, so that it is, in the end, worth the insurance companies' while to keep up the Salvage Corps.

7230. Although

7230. Although four-fifths of the property whichyou have benefited is found not to be insured?—No, I do not say that four-fifths of the property which we have benefited has been uninsured, but I say that four-fifths of the people in London do not insure their property.

7231. I understood you to state that in five years there were 7,986 fires which resulted in 10,201 damages, and of that number of damages 8,206 were uninsured, leaving only 2,000 that were insured?—That is so.

7232. Then, it follows that the insurance companies, in addition to their public spirit in paying so large an amount towards the fire brigade, actually pay a large proportion of the cost of endeavouring to preserve property with which they have no concern?—That is so.

7233. And I understand you, as an experienced man, to say that rather than have a few large stations with a good many men and a good many engines, you would have a much larger number of stations with smaller appliances?—Certainly.

7234. Because the opposite opinion has been given in this room, and attention has been called to the fact of the telegraph having very considerably altered the former position of things?—But though the telegraph does a great deal of good it cannot turn a mile into half a mile for the distance to be run by a pair of horses.

7235. Did I understand you to say that in your opinion the fire brigade, as a whole body, should be attached to the police force?—I think so, if we are to entertain the idea that the police can help us as much as I say they can.

7236. Then, it follows that you think the Metropolitan Fire Brigade should be a branch of the police?—I have always thought so.

7237. Sir *James Hogg.*] Will you kindly tell me how many feet high you consider a jet ought to be as the minimum?—I should say 20 feet.

7238. May I ask how many feet of hose you would allow for 20 feet pressure?—The length of hose would quite depend upon the circumstances how far the fire was from a hydrant.

7239. How many feet would you allow upon the average?—That would entirely depend upon the street. For instance, in a crowded place like Cheapside, if a hydrant were only 50 feet off, that length of hose would be enough.

7240. Can you tell me what amount of deduction you would be prepared to make from the head of water with that length of hose, with 150 gallons a minute delivery; that is to say, how much would the friction through a given length of hose, with 150 gallons a minute delivery, reduce the pressure?—Scarcely anything worth speaking of. There would be a depreciation certainly, but not anything worth speaking of.

7241. Have you ever made experiments to ascertain that?—I must have done so hundreds of times.

7242. How long ago did you make the experiments?—I was in the fire brigade 18 years before I joined the Salvage Corps, and one would suppose that in the 18 years I must have made the experiment a good many times.

7243. Have you experimented to test what the reduction of the pressure would be for the water passing through 100 feet of hose?—Not specially with that view.

7244. *Chairman.*] You do not speak as an engineer upon the question?—If that question is being put in a scientifical engineering form, I must confess I do not understand it. I know a jet when I see it, and I know what a main is capable of doing in a general way.

7245. Sir *James Hogg.*] You cannot tell what the reduction in the power would be by friction from the hose?—The question is, what is the size of the hose; whether is it a $2\frac{1}{2}$ or $1\frac{1}{2}$-inch hose.

7246. Take a $2\frac{1}{2}$-inch hose?—Then the friction would be very small indeed.

7247. Take 100 feet of hose of $2\frac{1}{2}$-inch; what would be the friction?—I do not understand the question sufficiently to give an answer, unless I knew the size of the main and the pressure.

7248. Do you know the statutory obligation upon the different companies with reference to the pressure they must maintain above the pavement?—I do not.

7249. Do you think it would be necessary in a system of constant supply to cut off the stop-cocks for domestic service in the neighbourhood?—That would

Mr. *W. Swanton.*

13 July 1876.

depend upon the size of the main from which the domestic service was being drawn. If it was a 20-inch main and a 7-inch pipe was drawing from it, I take it that the 7-inch draw would be so insignificant that a good pressure would be got from the large main notwithstanding that draw.

7250. Can you tell me how many 20-inch mains there are in London?—I cannot tell you that, but I know there are some.

7251. Do you think there are 10 miles of them?—I should say more than that.

7252. In what company's district would there be mains of 10 miles of them?—I cannot answer that question straight off, but I know that the New River Company have some miles of it. I know the East London Water Company have some miles of it, and also the West Middlesex have some miles of it.

7253. Do you agree with the statement in Mr. Lovell's letter of the 23rd November 1871, that "the continuous supply about to be required by law may be expected to reduce the pressure in the mains much below its present point, and may possibly even interfere with the practice of cutting off the water from a portion of a district for the purpose of increasing the supply at the spot where it is required for the suppression of a fire"?—If I did not see that statement here I should have supposed that Mr. Lovell had never said that. I do not think that paragraph ought to operate prejudicially upon the mind of anyone at all, because Mr. Lovell is not a practical engineer with reference to water, and really does not know very much about what the pressure would be, or what effect the friction would have, upon the pressure, in giving a hasty answer.

7254. Were you rather surprised to see that paragraph?—I would not say that, but I would suppose that Mr. Lovell when writing that part might have been thinking of something not quite bearing upon the point at the moment.

7255. Do you agree with that, or not?—I do not agree with it entirely.

7256. Do you think the intermittent or the constant supply the better for hydrants?—The constant supply of course is better.

7257. The waste occurs, does it not, when the water is in excess; if so, is it not simply a question of the cost of the water to the companies?—If half the quantity of water wasted at fires, which is the case now, is continued the water companies must necessarily and naturally be large losers by that waste.

7258. Are you aware of the total number of gallons of water used and wasted for the purposes of fire per annum, and what is the money value, say at 6 *d.* per 1,000 gallons?—I am not, but I should say it was something very considerable indeed.

7259. Supposing the pressure in the New River main to be 70 feet, and upon the East London main 40 feet, and water were wanted from the New River mains, what would be the result if the mains were coupled together?—If a jet of 70 feet is required in a neighbourhood where the houses are lofty, it is better that it should not be coupled with the 40 feet pressure if the 40 feet be sufficient for that neighbourhood where they have nothing above 40 feet.

7260. But if one of 70 feet was coupled with one of 40 feet, can you tell me what the result would be?—I do not ask that they should be coupled together, except in cases of emergency, as when one company's mains were under repair.

7261. Have you thought at all what would be the result if one was 40, and the other 70?—I suppose the result would be something over 50.

7262. You stated that the pressure in London was quite sufficient?—I believe the pressure in London is quite sufficient for many hundreds of hydrants to be placed upon the mains from which good jets would be produced.

7263. Have you seen a Return of the experiments made by Sir Joseph Bazalgette?—I have, and I was very much astonished to see it.

7264. Surely you could not say that pressure was sufficient?—I should not like to say that of a man like Sir Joseph Bazalgette, but I was very much astonished to see such evidence.

7265. You were astonished to see that?—I was astonished to see that by the side of what I can see every day, namely, a strong jet of water from a good main.

7266. You would hardly put your own views against an engineer's test?—I would most undoubtedly put my own eyesight against what I see in figures and writing, because you may put figures in such a way that they repeat or contradict themselves

themselves again. If Sir Joseph Bazalgette made these experiments, and gave you that result, before I could give you an opinion with reference to whether he was right or wrong, I should like to know under what circumstances he made the experiments. If he made them under unfavourable pressures, it is not fair either to the Board or to the water companies, because it is possible to make an experiment when the mains are under requirement for domestic purposes, and if that experiment was taken then, that would not represent the pressure they could give at a different time.

7267. But supposing they were taken at different times of the day, and at different times of the night, that would not apply, would it?—Yes, it would, because the water is drawn off and turned off at different times, and such a test might be made at an exceptionally bad time.

7268. Notwithstanding these numerous experiments made by the engineer, you would rather put your own eyesight against these practical experiments made by an engineer?—Would you let me answer the question in this way: If I saw a main in a street that I knew would give a jet of 40 feet, and somebody told me that the neighbourhood was only able to give a jet of 20 feet, could I believe the man who said that, against my own eyesight, when I saw the 40 feet.

7269. Do you think that a jet could possibly go above the pressure in the pipe?—Not if you took the pressure at the time when the main was being drawn for various other purposes.

7270. Now I will go to another point; you say there are certain places where hydrants would not be useful; would it not be necessary for engines to go to all fires as they do now, because it would never be known whether they were useful hydrants in that neighbourhood or not?—Most certainly, I never supposed that anyone would propose that the engines should not go to a fire as usual.

7271. You say you would propose that even with these hydrants engines should be kept all the same?—Yes.

7272. You spoke with regard to the Rotherhithe fire; do you suppose this 4.50 to be the time at which somebody on the spot saw the fire, or the time when it was reported at the head quarters of the fire brigade?—I know very well the trouble your officers take to get that information; they could not by any possibility guess at the time; they have recorded the time there as correctly as they could get it; that I can answer for, and I believe that information was got as it always is got, by asking somebody upon the spot who first saw the fire, and using their own discretion and taking a great deal of trouble to arrive at the exact time.

7273. The 4.50 is the time the fire was first seen in the neighbourhood?—Yes.

7274. Have you any idea of the time that fire was first reported at Watling-street?—I believe about 13 or 14 minutes past five.

7275. You are quite correct; the call was given at 5.13. I think you stated that the float was an hour and a half before it got to work?—Yes, that was so.

7276. Will you tell me how you make that out, seeing that the call was given at the head-quarter station by a policeman from London Bridge of "A light showing eastward;" the officer in charge of the Rotherhithe float states that the pumps were at work upon the fire with five deliveries by 6 o'clock. (*Sir James Hogg handed in the Report by Captain Shaw to the Board, dated the 8th January* 1872)?—I am sorry that any member of the brigade should make such a statement, because I am perfectly sure, without fear of contradiction, that that is not true.

7277. Do you mean to say that the report which is put in by Captain Shaw, and the evidence of his own men, is not true; surely you would wish to recall that?—If the fireman on board the float took the time as I did, and gave us the place where he got it from, I could believe that those times which I have given, if they had not been confirmed, were incorrect, but if the fireman only goes upon his own believe about the hose getting to work before 6 o'clock, he has made a mistake.

7278. I will just read one paragraph: "If however there was one individual likely to be well informed on this point, it certainly would be the officer on board the D. float, who never left the vessel, and whose duty was more of a

Mr. *W. Swanton.*

13 July 1876.

routine kind, such as preparing the engines and pumps, and starting the deliveries as each line of hose was ready." You give an hour and 25 minutes, and I make it three quarters of an hour; as you distinctly say this officer told an untruth, I must ask you about it?—But probably it was in this way, that the man had no watch with him; I confirmed the time in two or three ways, and have no doubt about it.

7279. As you are rather strong about this man making a mistake, do you know other instances in which the fire brigade men have made mistakes?—I should not like to make general charges against them of making mistakes, in consequence of a man having overstepped the time in this case.

7280. I think you said they were very careful to give the time correctly in all those cases?—No doubt they are.

7281. If they give one time correctly the inference would be that they would take care to give it correctly in all instances?—No doubt; I may say I do not for a moment believe he told an untruth; I entirely withdraw the word untruth if it is to be understood in any sense of purpose; I have no hesitation in saying that the brigade work as well as men can work.

7282. You have been talking about small steamers for the river; could you tell me what mode of propulsion could be used for a vessel drawing 14 inches of water?—I should say a small screw, such as we see upon these little launches running about the river.

7283. Would such a vessel be able to carry an engine sufficient to cope with fires upon the river-side?—Yes.

7284. Upon what do you ground your opinion?—From seeing a vessel which was prepared which a good many of the committee went to see by the river-side.

7285. Did not Messrs. Shand & Mason say that to get a proper engine it would require a vessel drawing from 16 to 18 inches of water?—Yes, I believe so.

7286. Therefore, if the men who make them say they cannot do it at 14 inches you say you can?—If the thing was handed to me to get done, I would do it; there should be no "cannot" about it.

7287. They say they can do it at 16 to 18 inches?—I would be perfectly content to take it at even 18.

7288. Do you know that Captain Shaw says that he considers even 14 inches too much, and that it would require a vessel which would only draw 6 to 9 inches of water?—If the vessel drew 16 inches of water she might be beached.

7289. But a man getting out of the boat on to the mud would very soon drown, would he not?—Yes; but a good part of the banks of the Thames is not mud; it is hard causeway, where there would be no difficulty in beaching the vessels.

7290. Take Rotherhithe; there is mud all round there, near the granaries, is there not?—Yes.

7291. It is mud about where the float lay, is it not?—Yes.

7292. You know that in that case they required hands to get the hose along?—Yes, that happened to be one of the bad parts of the river.

7293. You stated with regard to some of the new stations that there never was a large fire close to them; is the Victoria Fire Engine Station one of the new ones comparatively?—Yes.

7294. Do you think a brewery would be a large place to burn down?—I know what you are coming to; what I meant to say was in general terms, that it has not been found to be the fact that up to the present many serious fires have occurred in the neighbourhood of those new stations.

7295. You will allow that the Victoria Station is a new station?—Yes.

7296. Do not you think that that might have been a very serious fire at Watney's Brewery if it had not been for that station?—Perhaps it would.

7297. And that fire was kept down to a small one?—Yes.

7298. That is one instance that has occurred to me, and perhaps you might find a few more?—Yes, no doubt we might, but those which I mentioned were very striking cases.

7299. Take the fire on 13th January at Edward-street, Chapel-street, Soho. Was there any complaint made to the Metropolitan Board of Works about the arrival of the engines in that case?—I do not think so.

7300. You said that was a serious fire which might have been made a small fire, but that being the case you never made any representation to the authorities upon the subject?—I think the insurance companies have been exceedingly quiet upon very many of these points. They have only approached the Board of Works when matters have become very serious.

7301. They did not think that serious enough?—It was a very serious matter, but it was one of the matters that they could bear to put up with, and not look upon as so serious as it was.

7302. Now with regard to the fire at Heal's; the Portland-road station is not so very far off, is it?—No, it is not. But I am quite satisfied that if the old station had been there the fire would have been confined to a small one.

7303. Is it not the fact that Heal's fire was very well alight, like the fire at Brooks' Wharf?—I believe it was.

7304. Is it not the case that the alarm was that it was a "well-alight" fire?—I believe the stable was alight at first, and therefore the stable being well alight it would show alight at first.

7305. But that would not make much difference, would it?—It was not all well alight. The stable was alight, and was allowed to burn into a larger place, because the engines did not arrive earlier.

7306. Have you ever calculated the difference in distance between Portland-road, where the station is, and Crown-street, where it formerly was; do you think it would have made any difference?—A good deal depends upon the call. Those old stations are such landmarks to everybody that when a fire occurs they rush directly to the old station; and I would say that when the fire at Heal's broke out, for every 10 people who were looking at it, eight out of the 10 would know where the old Crown-street station was, and only two would know where the Portland-road station was.

7307. Do not you think that people would very soon get accustomed to a very large station which had plenty of access, and would find it out in place of a small station in a small street, and that it would make a much better landmark?—Yes, but those old stations have been there such a number of years that they are known by the merest child about the streets.

7308. And the children would soon find out the other station, would they not?—No doubt they would.

7309. Now, how would you double the number of stations without expense to the brigade?—In the first place, if you are contemplating building any more large stations I would say, do not build a large station. Supposing the station you think of building is to cost 10,000 *l.*, I would say only spend 2,500 *l.* upon a small station, and spend the remainder of your 10,000 *l.* in building three other stations to make up the whole amount.

7310. Taking a 2,500 *l.* station, how many engines would you put there?—One engine would be quite enough.

7311. And how many men?—Five or six; as many as you could spare.

7312. What provision would you make for horses?—The building you would get for that money would be sufficient for four or five men and a pair of horses.

7313. Would that include the cost of the land?—I know plenty of places where you could get it for fully that, and plenty of places where you could so remodel the place as to make it suitable, but if you are waiting for a freehold, and will not take anything but freehold, it will cost as much for the freehold as it would for the station.

7314. Your opinion is that five or six insignificant stations are better than a smaller number of large powerful stations, with powerful steam engines, with a number of men ready to cope with any fire?—I am sure you will admit that if you had a fire engine half a mile from your house, it is more likely to be ready to help you than if it is two miles off.

7315. But you stated that those engines would not be drawn by horses, but that they should be drawn by men?—Yes, those small engines should be drawn by men.

7316. Do not you think that with a good pair of horses you will get an engine more rapidly to a fire than if drawn by the police?—When I speak of the police doing that, I mean that they are extra to the fire brigade. I do not wish the police to have to do any more than the fire brigade would have to do.

Mr. *W. Swanton.*

13 July 1876.

7317. But do not the police assist the fire brigade in every possible way?—They do to some extent.

7318. They do not drag the engines?—They have none to drag now.

7319. Mr. Lovell stated that you could give the Committee some information about Wellclose-square; what sort of a station was that originally?—I know it very well.

7320. Was it a good station or a bad one?—It was good for many purposes.

7321. Was not it an old tumble-down place?—It was an old place, but not tumbled down; it has not tumbled down yet.

7322. Is the access good to that station?—It is not as good as it might be; it is not so good as the situation you have in the Commercial-road, but for the large bulk of property in the neighbourhood of the Docks it was far more accessible than the Commercial-road is.

7323. You are aware, no doubt, that the Metropolitan Board of Works tried to get in the Docks themselves a station, or ground for a station?—I do not know what they tried to do; all I know is that they did not do it.

7324. They put the station in the Commercial-road because they could not get that station in the Docks?—There are a lot of old buildings about in the neighbourhood of the Docks which I am sure the landlords would be glad to get rid of; but I do not find fault with your going to the Commercial-road; I think it is a very good position, but I think it is a very bad position if you are going to leave the Docks in the lurch.

7325. Do you call going to the Commercial-road leaving the Docks in the lurch?—Yes, I do; and I am afraid one of these days we shall know it to our sorrow.

7326. Do you know how much longer it would take for an engine to go to the Docks from the Commercial-road than from Wellclose-square?—That depends upon the circumstances. If Wellclose-square is blocked up with a lot of vehicles it would take some time; but if the road were clear it would not take long.

7327. Wellclose-square was very often blocked up, was it not?—Not very often, because the approaches has been very much improved of late years.

7328. But Commercial-road is a fine open street which is never blocked up?—It is sometimes; but I think when you have taken your entire strength from the Docks to the Commercial-road, it is not only a question of the time taken up by the engine to reach the Docks from the Commercial-road, but also the time it takes for a person to run from the Docks to the Commercial-road with the information, and if you double it you make it four times in this way.

7329. Mr. *Stewart Hardy.*] In fact in all these cases the real objection to the movement of the stations is not the extra time the engine consumes in coming, but the extra time the call consumes in reaching the engine?—Quite so; a good deal of it. For instance, if a person about to call the engines has a short distance to run, there will be a good many candidates to take the call; but if there be a long run very few would care to take it.

7330. The Committee have had a good deal of theoretical evidence with reference to the pressure in the pipes, and although I do not wish to set practice against theory altogether, still it may be of some value. Now, is it not the fact, in your opinion, that the Metropolitan Board of Works are taking the wrong view in supposing that if you put down hydrants you can abolish the engines?—Quite so.

7331. That is to say, that hydrants are merely supplementary to the engines?—Yes, quite so.

7332. We have had evidence that if the domestic supply were being drawn off there would be no pressure of water available. Have you ever known a plug drawn out and found an absence of water?—I have never known an instance of that kind.

7333. In the first place, with regard to hydrants, would you not place them in and around the most valuable districts?—Quite so, quite apart from the question of insurance, but where large blocks of houses are.

7334. In cases where property is valuable the mains are, as a rule, large and ample to afford the required pressure, are they not?—That is so.

7335. And you would think it desirable, where valuable property exists, that there

there should be hydrants placed so that they may be used at the first breaking out of a fire?—I am sure of that.

7336. If there were no pressure they would be a readier way of obtaining water than the ordinary plug, would they not?—Yes, and there would be much less waste of water than there is now.

7337. And that saving in waste would be an increase of pressure in itself?—Yes.

7338. Is it not the fact that the water companies are compelled to give a pressure which will supply their customers in the districts in which they have to supply?—I believe that is so.

7339. That it is impossible to provide their customers unless they give a supply which will supply the tops of the houses?—Quite so; buildings are very different from what they were 20 years ago. You will find a large number of high buildings now requiring high-water service as against very few 20 years ago requiring so high a service; and therefore the water companies, in order to meet that difference, have increased the strength of the mains in proportion to the increased height of the buildings in most cases.

7340. And therefore the pressure which is laid down by Act of Parliament does not adequately represent the pressure given by the companies throughout their districts?—I should think in many instances the water companies give considerably over what they are bound to do.

7341. With regard to the joining of their mains, I suppose you mean only joining in the case of a main happening to be shut up?—Only in the event of repairs, or in the event of large fires occurring just near the junction.

7342. If the water from the larger mains of a company which gave a high pressure was turned into the mains of a company which gave a lower pressure, the result would be a diminution of the high pressure?—No doubt.

7343. Mr. *Stevenson.*] You find I presume that the pressure varies at any particular point from hour to hour during the 24 hours?—Yes, there will be a variety of pressure, and if you took the pressure at every hour no two hours would agree.

7344. You, I presume, judge of the pressure in the pipes by the jet you get when you attach a hydrant?—Not so much as by the flow we find from the plug.

7345. What is the greatest variation of pressure you find from a hose attached to a plug at various times?—That would entirely depend upon the size of the main. If it was an 18 or 20-inch main, you would, even while the services were in use, get a jet of perhaps 50 feet.

7346. With a large main, what would be the worst height you would get?—In ordinary districts we never expect to get a jet of less than 20 feet.

7347. So that with the large mains the jets would vary from 50 to 20 feet?—I should suppose they would.

7348. Are large mains the exception in the London thoroughfares?—In nearly all the principal streets where I have drawn water for engine purposes the mains are from 12 to 20 inches.

7349. It is in the streets with the small mains that the difference is most felt when consumption is going on?—In those streets where there are small mains you may rely upon it there is not property likely to make a large fire.

7350. I thought you stated that along the river-side, where there is a large property but not a domestic property, there are small mains?—That is so; and that is the only exception. The water companies lay the water on with the belief that people are likely to buy it of them, and if nobody in the neighbourhood will buy the water you cannot expect them to lay down large mains.

7351. But from a fire-extinguishing point of view there is a difference of pressure upon that account?—There is a difference of pressure upon that account, because where there are very small mains laid down the pressure is checked at every turning.

7352. Mr. *Locke.*] Do the insurance companies complain of the manner in which the Metropolitan Board of Works have acted with respect to them?—They have, I am sorry to say, great reason to complain. Many times there has been no notice taken of their complaints.

7353. What is the objection which the fire insurance companies make?—In the first place they strongly objected to the removal of those stations; they

Mr. *W. Swanton.*
13 July 1876.

strongly objected to the very bad and inefficient state of the float service; they objected, and the Metropolitan Board of Works would not listen to them when they said it would be well to put the mains together in cases of emergency; and they also repudiated the usefulness that might arise from bracketing the police and fire brigade stations by telegraph. Those were all, in the minds of insurance people, most important points, and the adoption of all of them would, in their view, tend very much to reduce the destruction of property in London.

7354. Supposing there were a fire in those places where the insurance companies are ready to pay for protection, those would be the places, would they not, which most required insurance, and where a greater sum of money would be lost in the event of a fire?—That would be so.

7355. When the Metropolitan Board of Works have ceased to have their stations near these large buildings, where have they gone to?—They have taken them to remote parts where there is really nothing to burn, compared to what there was in the places where they were removed from, because apart from the question of insurance, if you have a very large fire it requires a very large force to extinguish it; but if you prevent it being a very large fire a very small force will be sufficient to deal with it.

7356. Do you think that the Metropolitan Board of Works have removed stations which ought to have been retained?—Yes, most certainly.

7357. Are the distances very much increased as against those places which have very great property in them?—I should say the difference in distance would be upon the average, a mile, as against a quarter of a mile originally.

7358. Are you aware of any great losses taking place in consequence of the changes which the Metropolitan Board of Works have made?—I have already given the Committee some reports of those losses; not the whole of them, but some of them.

7859. The insurance companies are not called upon to insure to that extent which they were formerly in the large buildings which are near the stations, are they?—I think it usually operates in this way: that where there is a fire-engine station there is not so much insurance business done as there is where there is not a fire-engine station, because people expect that the engines will be immediately upon the spot, and that they will escape from serious loss.

Mr. *T. H. G. Berrey*, called in; and Examined.

Mr. *T. H. G. Berrey.*

7360. *Chairman.*] You are a Civil Engineer, I believe?—I am an Associate of the Institution of Civil Engineers.

7361. Are you the Superintendent of the Manchester Corporation Waterworks?—I am.

7362. Were you in charge of those works when the change took place as between the intermittent and constant supply of water?—Yes; I was appointed superintendent when the corporation purchased the waterworks from the late company. The late company supplied water intermittently, and as soon as we could make the change we did so. It took about three years to carry it out.

7363. Have you found any great difficulties in carrying out that system of constant supply?—None whatever. We had ample power to do it, but it was done in such a manner as to cause little or no irritation to the inhabitants. It was taken in sections; it was not done *en masse.*

7364. Is it your opinion that when such an alteration takes place it ought to be done by degrees?—There is no doubt about it. You cannot do it in any other way properly.

7365. There are some great advantages derived of course, both for fire and other purposes, from obtaining a constant supply, are there not?—The advantages are enormous.

7366. Has it not been found, in your experience, that in establishing constant supply, you have produced a diminution in the consumption of water?—Considerably; from 38 gallons per head per day to 20 gallons.

7367. And that, from that point of view, a constant supply of water is a great saving?—I have no doubt about it.

7368. Although

Mr. *T. H. G. Berrey.*

13 July 1876.

7368. Although no doubt when you go to place a constant supply upon a district, you have to provide for the domestic part of it certain fittings which are at the first starting a considerable expense?—We have to do so now, but when the constant supply was introduced at first, they were not in existence. At that time we merely saw that all the apparatus to deliver the water was put in thorough repair. After the constant supply was turned on in the various districts, careful inspection took place with reference to the waste of water, and any waste which occurred was immediately remedied.

7369. Has your experience with regard to this change been confined to Manchester, or have you had anything to do with the change from intermittent to constant supply in other places?—I have been consulted by all the large towns in the United Kingdom upon the question, and most of them are carrying out our regulations upon the subject.

7370. That is, where the authorities have taken the water supply into their own hands?—Both in the instances where the public authorities have taken the water supply, and also in the cases of the water companies themselves.

7371. I understood you to state that, although at first you did not, yet afterwards you brought all the house system into a condition suitable to this constant supply service?—As far as the existing fittings went, but not with new fittings.

7372. Was that done at any great cost?—No.

7373. For the purposes of a fire brigade, I suppose the advantages of having a constant supply of water are enormous?—The advantages of a constant supply from a hydrant are enormous. A constant supply is a very important element in the question of fires, because you obtain the water immediately.

7374. With regard to the placing of hydrants, are you satisfied with the working of the system which has been adopted in Manchester?—Yes, and I think everybody who knows it is also satisfied.

7375. From your experience of working them, you have not, I believe, found any fault with the hydrants which are laid down there?—No, the present hydrants were laid down by the corporation; they were originally the old wooden plugs which you have in London, as I was surprised to hear. A modern hydrant was introduced, and it is now carried out throughout the whole service; that is Bateman and Moore's patent.

7376. Evidence has been given before this Committee that there are objections to that hydrant on account of its liability to get out of repair; has that been your experience?—That is a mistake; it is not so. I think it is as durable a hydrant as you could have. There is another hydrant in existence in the borough of Salford, which is another portion of the city of Manchester proper, across the River Irwell, which is under a separate jurisdiction, and they have introduced a hydrant from which water can be obtained quite as rapidly, but without the introduction of the ball; in fact, it is a valve; you can screw on a stand-pipe to the hydrant; it is the invention of Mr. Hawksley, and there is no difficulty in obtaining the water, although the principle is different from ours; but that only applies to the borough of Salford.

7377. I understand you to state that the hydrants which have been fixed throughout Manchester proper have worked perfectly satisfactorily for the purposes of the fire brigade?—Yes, perfectly.

7378. And that you do not find that they get out of order, as it has been represented that hydrants of that pattern would do?—No more than hydrants of other patterns do. When the hydrants were first put down, they were not so perfect as they are now; of course, we have had many years' experience of their use, and we found that by making certain alterations in their construction, and by putting other substances as a bed for the ball, they have become much more durable, and are perfectly watertight. There was a little complaint about them, in the first instance, from the mode of their construction, and when the pressure was not very great they were liable to leak. That defect is now obviated by the different modes in which they have been constructed.

7379. Do I understand that, now that the hydrants have been improved, they can be put down at the same cost as has been stated before this Committee as the cost of them?—Yes, they can be put down upon new services at about 30*s.* each.

7380. That would include merely the placing of the box and the hydrant upon the main; it does not include the cost of the service pipe to take it to the

Mr. *T. H. G. Berrey.*

13 July 1876.

side of the street?—It does not include the branch pipe, but only the hydrant proper attached to the main pipe.

7381. And that you lay down in Manchester at a cost of about 30 *s.* each?—We lay that down in Manchester at a cost of about 30 *s.* upon a new main; and for about 2 *l.* 15 *s.* upon an existing main, because the soil has to be excavated, and the existing main has to be broken, and of course there is a good deal of time lost under those circumstances.

7382. Have you ever considered the question whether, looking at the metropolis, such a hydrant could be placed upon the mains of the metropolis for a similar cost?—I believe so; the only difference is this, that I am informed that in some places the pressure is very light, and from the evidence we have had here to-day that appears to be so.

7383. What I wanted to know was with regard to the cost of placing hydrants upon the mains in London, whether you would think that the hydrant which you use in Manchester would answer in London; and, secondly, whether you think you could place them in London for something like the expense for which you have laid them down in Manchester?—I should think so; I am not aware what the cost of paving in London is; in Manchester we do it daily.

7384. It has been represented to the Committee that hydrants would not be satisfactory for London, and that the cost would be very much in excess (as some of the witnesses have said, over 10 *l.* each) for placing them in London?—That must be a mistake altogether, or the matter must be under very bad management if they cost anything like half that amount.

7385. In your opinion they should be laid down for the same rate that you have paid in Manchester?—Certainly, with proper management.

7386. Now going to the point you were referring to, I suppose the great advantages you derive at Manchester from the hydrant system there arise very much from your having a considerable gravitation pressure?—That is so, no doubt.

7387. Are you aware that that does not exist in London?—So I am informed; I am quite ignorant what pressure does exist in London.

7388. The pressure varying with the different companies in London, I suppose you would say that hydrants would be of use as an aid to the engines for extinguishing fire, although they might not always be available for use apart from engines?—Quite so; as you have not the pressure that we have at Manchester, you could not throw the water to a sufficient elevation without an engine to put out a fire, but for the purpose of obtaining the water from a hydrant in comparison with the antiquated wooden plug which is in use here, the thing is beyond comparison; either hydrant, whether Bateman & Moore's or Hawksley's, would have the effect of enabling the fire brigade to get a supply of water instantaneously.

7389. That is to say, placed upon the mains?—Upon the service mains; we do not place them upon the mains; what I mean by service mains are iron pipes from 3 to 5 inches in diameter.

7390. Are those connected with the domestic service supply?—Yes, and with the trade service also.

7391. Supposing your constant pressure were at a pressure such as is represented in London as a varying pressure, stated by the engineer not to be sufficient always to give you a jet of water, you think still there are advantages in a system of hydrants placed upon those services?—Yes, and for this reason, that it would enable the brigade to draw the water from their main through the hydrant instantaneously; there would be sufficient water at all times to feed the engines by the aid of pumping.

7392. There would be less chance of waste with a hydrant, would there not?—Yes, there is no chance of waste with a hydrant.

7393. And therefore there would be a great concentration of pressure?—Yes, there is no question about it; it speaks for itself; if you have three plugs drawn when you can only use one, the pressure is wasted, and you can only get the pressure of one.

7394. What is the pressure in Manchester?—At the Godley Reservoir the highest pressure is 378 feet; the Denton, which is the middle reservoir, has a 223 feet service, and the Gorton, which is the lowest service, is 145; the Prestwich, which is an auxiliary service to supply Pendleton and neighbourhood, is 250 feet.

7395. What

Mr. *T. H. G. Berrey.*

13 July 1876.

7395. What is the elevation of your reservoirs?—Above the datum the Godley is 478 feet, the Denton 323 feet, the Gorton 245 feet, and the Prestwich 347 feet.

7396. Are you able to avail yourselves of a united supply from those reservoirs?—Yes, we can change them at will; by turning the large valve we can turn the higher into the middle service, and the middle service into the lower, and *vice versâ*.

7397. So that you have practically the highest pressure always available if you want it?—Yes; it is not necessary except in very extreme cases.

7398. Can you give the Committee the area of your reservoirs?—They are about 600 acres, and the capacity is 5,000,000,000 gallons.

7399. That of course gives you a gravitation pressure which makes your hydrants absolutely independent of the engines working?—Yes; at about 97 per cent. of the fires in Manchester no engines are used at all.

7400. And at all the fires practically your hydrants are available?—Yes; at every one.

7401. Do you gain the advantage of bringing the water supply to bear upon a fire at an earlier period probably than that at which any engine is available?—Yes, because there are hose carts with simply a pair of wheels which a boy could run with with hose on them, with a stand-pipe and a branch which you can immediately screw on to the hydrant before the engine gets there if it is some distance from the fire-brigade station.

7402. And the existence of the hydrants enables you to multiply the fixed points from which you can deal with fires?—Yes, and it enables you to commence at once, because if you do not commence at once, in a few minutes the whole thing may be in process of burning out.

7403. Whereas by the instantaneous application of the hose by a policeman, or somebody on the spot, the fire might be checked, and confined to the spot in which it breaks out?—Quite so.

7404. To that you attribute the very few serious fires that you have at Manchester?—Yes, and the small destruction of property; the insurance companies are perfectly aware of that.

7405. In your opinion that system applied to London would give us greater protection against fire than we have under the existing system?—Yes, there is no question about it at all; we have had 26 years experience of it. I have had the management of it for the whole of that length of time, and I say that I think the things that can be done in Manchester can be done in London, if the authorities are desirous of carrying it out.

7406. Supposing a single authority existed in London with a determination of carrying this out, you believe you might carry it out at a cost to a certain extent similar to that which you had to undergo in Manchester, with the like result of efficiency?—I think so; I do not see why it should not, if the matter were well managed; it entirely depends upon that.

7407. You do not believe that the fact of the difference between the two towns would necessitate so great a difference as the cost of hydrants being put down has been stated at?—No; I think that what will do for 760,000 people will do for three and a half millions, both with regard to the water supply and the supply of hydrants.

7408. For that purpose would you advocate the uniting together of the different water supplies into one system?—As far as regards that question, if it were under one authority it would be desirable to do so, but as long as the companies are independent and have a different mode of distributing their water; great difficulty will arise; it would necessitate trunk mains, and mains of a variety of descriptions being connected from one service to another, and the whole thing could not be done so well in London unless the whole of the companies were united. I do not wish to go into any financial question about the companies or their *modus operandi* of supplying water at all, but what I mean to say is, that there would be great economy of water, and of working and management, if the water companies were to agree with the public authorities to sell their concerns, and then to be united under one general management. The circumstances, as they at present exist, are so varied that they could not well be united, for the distribution of water, as long as they are independent companies.

7409. But one condition of the state of things which might be brought into

Mr. *T. H. G. Berrey.*

13 July 1876.

effect in London would be the uniting of the companies so as to get an uniform pressure throughout the town?—I have no doubt of it.

7410. If that could be established then a system of hydrants would give you similar facilities to what you possess in Manchester?—Yes, and with a less consumption of water than is now the case, because our maximum consumption, now including a large consumption for trading purposes, is only 20 gallons per head per day, and the water is on constantly at high pressure. I am informed that you are using here from 33 to 35 gallons per head per day, and in some cases the water is on only from one hour to two hours a day; that shows that if there were unity of action a constant supply might be given without any difficulty.

7411. Could a constant supply be given now with the existing system of service pipes?—I think so.

7412. There would be, in your opinion, no danger of breakage of pipe from the pressure being increased?—No, for this reason, that if the present pipes will stand the present pressure they will stand it hereafter.

7413. The shock under the intermittent system is as great as anything they would have to undergo under the constant supply?—Yes, the air in the pipe, and a variety of things, would tend to create greater damage than if the water were on constantly.

7414. Then the difficulty that has been suggested that it would be necessary to relay all your service pipes if you adopted the system of constant supply, would not arise?—I cannot believe that for a moment.

7415. Is there anything else that you would wish to place before the Committee?—The authorities in Manchester are very particular in reference to the mode in which the water should be dealt with under constant pressure. Of course it would require constant supervision, as Mr. Deacon found in Liverpool when he introduced the constant pressure; it was intermittent previously; he has since invented an apparatus which has assisted him very materially, but what would be necessary would be a constant supervision of the water supply, and then as circumstances arose to introduce the modern fittings when the existing ones are found out of order.

7416. So that, in your opinion, this system might be established in London by degrees, just as you have established it in Manchester, if the authorities chose to face it?—If there were an authority to do it, I have not the slightest hesitation in saying that it could be done. I think it could be done if it were in my hands; not that I wish to have it to do.

7417. Mr. *Onslow.*] I think I may gather from your evidence that whatever you may do to increase the fire brigade force, it is almost impossible to have a thoroughly efficient fire brigade in London until you see, first, that your water supply is in a proper and efficient state?—From all the information I have I believe the fire brigade in London is in a very efficient condition, and although in Manchester the fire brigade is connected with the police force the police are not firemen; they merely act under the same committee; the principle is the same as in London under the Metropolitan Board of Works. Although it is managed by the same committee the police are merely keeping order at a fire. With regard to the advantages of utilising the brigade, of course it is clear to everybody that with the system of constant supply it must be made much more efficient. If they cannot obtain a supply of water for 10 minutes or a quarter of an hour after the engine has arrived at the spot the property might be destroyed, whereas if they had an immediate supply it might have been saved. No responsibility can attach to the brigade under those circumstances.

7418. However, from your experience in Manchester, you are of opinion that hydrants are very superior to any steam fire-engines?—Yes; steam fire-engines are only used as auxiliaries at enormous fires, or where you have difficulty of access, but hydrants are imperatively necessary in a large community like London if you are to extinguish fire, and obtain the water at the earliest time.

7419. Did you ever consider any calculation of what the expenditure would be of amalgamating all the water companies so as to give London a uniform supply?—I have not gone into that question.

7420. What is the reason of the greater wastage in intermittent supply as compared

pared with constant supply?—The main reason, I think, is that the water companies do not take as much care of the intermittent supply as they would of the constant supply, for this reason, that they turn off the water at a given time, and they know what will pass through their mains by the pressure; the engineer can calculate what quantity will be consumed, whereas if the water were turned on constantly the consumption would become excessive until a fresh arrangement had been carried out; but with regard to the ultimate consumption of water, I am convinced, from 26 years' experience, that it would be an economy to the companies themselves. I think two-thirds of the water they are now using would give a constant supply in London; they do not bother their customers by examining their fittings, and inspecting the premises to see what condition the pipes are in, because if water runs to waste after filling their cisterns, as it does in some instances, they know they have only consumed a certain quantity which they can provide for, whereas if they had it under constant supply they would save an enormous quantity of water.

7421. In Manchester you found that, having only one company to deal with, it was a very easy matter to change the supply from intermittent to constant service?—We became the possessors of the concern, but there was only one company to supply the whole of Manchester and Salford.

7422. Therefore as regards what Manchester and what London has now, the two towns are in no way analogous, considering we have nine companies in London, and that you had only one in Manchester?—It could only be done in London by Act of Parliament, unless you could get all the water companies to agree; the water supply of London is a valuable property, and no doubt there would be much difficulty in inducing them to give it up.

7243. Do you know any place around London which is high enough to give a proper pressure?—No, I am not acquainted with the geographical positions of the different reservoirs.

7424. Sir *Henry Peek.*] Can you tell the Committee what the total cost of the water arrangements of Manchester have been?—The capital cost has been 2,500,000 *l.*

7425. How do you charge the water; according to the people's rating, or according to so much per 1,000 gallons?—We charge them for domestic purposes by rating in the city of Manchester at 9 *d.* in the £. upon the poor rate assessment. Beyond the city we charge 1 *s.* in the £. upon the rack rent. In the city there is also a public rate paid by the owner of 3 *d.* in the £.; the total difference is between 10 *d.* and 1 *s.* in the £.

7426. Do you charge by meter for water for trading purposes?—Yes, for large quantities; not for small quantities for schools and so on, but for manufacturing purposes we have an arrangement made by a scale; some of the manufacturers pay us 1,500 *l.* a year.

7427. Is the pressure alike all over Manchester?—No, there are three zones of pressure over the whole water supply, the higher, the middle, and the lower service.

7428. You made the remark that the insurance companies are perfectly well aware of the little destruction of property there?—Yes, they must be from the small amounts they have had to pay.

7429. Are you aware that the insurance rates have been put up lately?—Yes, there has been something of that kind, but it is very odd they should do so when the water supply is so good.

7430. It does seem odd that they should put up the rates when there are no losses?—I know that there was considerable difficulty to get them to contribute something towards the expense of the fire brigade. They have eventually agreed to do so, but not until the corporation refused to allow the engines to go beyond the limits of the city.

7431. The corporation undertake the putting out of fires within the limits of the city?—They do so.

7432. I think they asked the insurance companies to contribute when the limits of the city were exceeded?—Quite so; but the Manchester Insurance Companies have contributed for years to the fire brigade.

7433. Sir *James Hogg.*] Does not the water in Manchester come down entirely by gravitation?—It does.

7434. Is not the whole of the London water pumped?—I believe so.

7435. You stated that you thought that engines should only be auxiliaries to

Mr. *T. H. G. Berrey.*

13 July 1876.

hydrants. You perhaps heard the last witness say that on no account should the engines be discontinued?—I do not think that the engines should be discontinued.

7436. You do not think that a large town like London should be left entirely to the chance of hydrants?—No, I do not think it should, because, according to all accounts, you have not a sufficient pressure.

7437. Even with a good pressure, do you think it would be safe in a place like London to discontinue the use of fire-engines?—I do not think it would.

7438. Do you think the water companies in London would be satisfied with the Bateman hydrant?—I do not think they would.

7439. Do you know that the Committee have had the price of hydrants quoted to them at 20 *l.* a hydrant?—That must have been a very foolish price. We can make them ourselves for 15 *s.* a piece.

7440. But we have been told that the City of London have contracted for the placing of hydrants in the City of London for 20 *l.* a piece?—Somebody has got a very good contract, then.

7441. But you would allow that the City authorities are very well able to take care of their own interests?—No doubt they are. I have been in communication with them for some time on the subject.

7442. How much per 1,000 gallons do you charge to the trade?—We charge 2 *s.* for 2,000 gallons to 4·85 *d.* for larger quantities beyond that; all the large traders have the option of consumption of water by meter.

7443. I think you stated that the Fire Brigade Committee is under the Police Board in Manchester?—It is under the Watch Committee. Some remarks were made this afternoon with regard to making policemen into firemen. I entirely disagree with that, because I think the fire brigade is a service which ought to be kept to itself; and to show you how that opinion is acted upon in Manchester, the police authorities there do not allow their policemen to become firemen unless they are transferred. If a man wants to leave the police and become a fireman, he can do so by leave of the committee. In Manchester the police keep order at a fire, and upon that account, seeing that they are in the charge of the same committee, if it were desirable that they should unite the two services they could easily do it, whereas they have not done it.

7444. You stated that you thought the pipes in London would stand the constant pressure, do you think they would?—There are some very high authorities who think so. As I said before, if the present pipes will stand the present pressure when the water is on intermittently, they ought to stand it when it is on constantly.

7445. Do you think the fittings in the houses would stand it?—They stand it now.

7446. But would they stand the extra pressure?—There would be no extra pressure, it would only be constant.

7447. Mr. *Stewart Hardy.*] What is your proportion of serious fires in Manchester?—There is a large proportion of cotton mills and warehouses, but you have had the chief officer of the fire brigade before you, and I really am not an authority upon that question.

7448. Now can you tell me whether there are any complaints at any fires in Manchester of an inefficient water supply?—I never heard of any except in case of an accident from a burst pipe.

7449. Have you not upon several occasions in hot summers been obliged to diminish your supply of water?—Yes, in 1868 and 1871. In 1868, if you recollect, there was a great drought throughout the whole country. We were six months without water in Manchester. We had two reservoirs then in course of construction, which are now finished, but we had then to cut off the water from six at night until six in the morning.

7450. You do not anticipate having to do that at the present moment?—No, we have six months water supply now in hand.

7451. How do you manage in the very poorest property?—We have a standpipe, self-acting, without concussion, and that is self-closing.

7452. You do not attempt to deliver in small houses?—Not in small houses of 2 *s.* or 3 *s.* a week rent.

7453. You can put the pressure of your reservoirs all over the town, can you not?—Yes.

7454. Supposing you found in the course of a fire that you had insufficient pressure, what would you do?—We have had it so arranged that the valve upon the 24-inch main can be opened into the 30-inches, and then into the 36-inch main. That is only done when a great number of hydrants have to be used upon the mains in the neighbourhood.

7455. In the middle of a large fire you could get your higher pressure if you wanted it?—Yes.

7456. Now with regard to the quantity of water which is taken under the constant supply at Manchester, is it not the fact that a very large proportion of the population use cesspools, and that there are not water-closets?—No, we have no cesspools, although we have many houses without water-closets, but with the usual privy and ash-pit.

7457. Of course, in cases of constant supply one of the largest sources of waste is the water-closet, is it not?—I do not think that it is; I think the largest source of waste is the ball-tap; but we have a mode of detecting that waste now, because we have a warning pipe upon all new services.

7458. A great many theorists about constant supply object to the ball-tap altogether, do they not?—No; the water-closet, the bath, and the washing apparatus are taken from the cistern; but the water supplied for domestic purposes and the drinking supply are taken direct from the main. We have a regulation to that effect.

7459. *Chairman.*] You stated that the estimated cost of this change of system was about two and a half millions?—The total cost of the works constructed by the corporation, and the works purchased from the late company, was two and a half millions. The old company's works cost 556,000 *l.*

7460. Does that include Salford?—Yes.

7461. What is the proportion of the population?—About 90,000 to 760,000.

7462. Can you state what has been the charge to the consumers of this alteration of fittings?—It did not exceed 10 *s.* or 11 *s.* per house.

7463. To bring about the system which you have brought about in Manchester, what did it cost?—It cost us, upon the average, 10 *s.* or 11 *s.* per house, but that did not include the new apparatus which we are now introducing; but with what we did then we gave a constant supply with a diminished consumption of water.

Monday, 17th July 1876.

MEMBERS PRESENT:

Mr. Clifton.
Mr. Forsyth.
Mr. Hankey.
Mr. John Stewart Hardy.
Mr. Hayter.
Sir James Hogg.
Mr. M'Lagan.
Mr. Onslow.
Sir Henry Peek.
Mr. Ritchie.
Mr. Stevenson.

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

Mr. *Richard Collins Yelland*, called in; and Examined.

Mr. *R. C. Yelland.*
17 July 1876.

7464. *Chairman.*] You have charge of the Salvage Brigade at Liverpool, have you not?—I have.

7465. And you are able to speak with reference to the way in which the fire brigade is managed at Liverpool?—I know generally the way in which it is managed.

7466. The fire brigade is, I believe, a part of the police force of the town?—It is.

7467. Does that imply that it is a distinct body managed under the same chief, or is a part of the actual police force?—The fire brigade is a part of the actual police force; there are only 15 men who do not do police duties, who are set apart expressly for putting out fires.

7468. There are 14 men who are, I suppose, in the position of head men at the stations?—They are the same as the fire brigade in London; six go on duty in the day time, and five relieve them at night. There is a superintendent, a deputy superintendent, and two engineers; they do not do police force duty, but only fire brigade duty; in all we have 180 firemen, two engineers, one deputy superintendent, and one superintendent.

7469. And with regard to the firemen, they form a part of the actual police force, do they not?—Yes, they all belong to the police.

7470. Are the whole of the police force drilled as firemen, or merely the 180 men; that is to say, do they take their round of duty and serve in the fire brigade in turn, or are those men distinctly set apart for the particular duty of looking after fires?—They do police duty as well as fire brigade duty; there are 19 fire stations in all; at eight stations there are engines, and at the rest there are only reels and hose. At all the stations, with the exception of the chief station, there are three firemen taking it in turns, eight hours each, to look after a reel, so that in case of fire the alarm is given, and those men are always there to run away with the appliances.

7471. Are those appliances for extinguishing fire stationed at the police stations in the town?—Yes.

7472. Those constitute your only fire stations?—That is all.

7473. What is the area of Liverpool?—I understand it is about eight square miles.

7474. You have a constant supply in your mains at Liverpool, I believe?—We have.

7475. Have you hydrants fitted upon the mains throughout the town?—Yes.

7476. Are you in a similar position to Manchester, that you have not often to use the steam fire-engines for the purpose of putting out a fire?—We use the steam fire-engines only in cases of very large fires.

7477. Do you know what number of fires you have had during the last year in which the steam fire-engines have been used?—No; we have cotton fires in Liverpool,

Liverpool, which are generally very large fires. Last year we had 13 large fires, and the steam fire-engines would have been used at all of them, but at ordinary fires it is not necessary to use the steam fire-engines, because we have sufficient force of water.

7478. You simply apply a hose to a hydrant, and use that for extinguishing the fire?—Yes.

7479. Are you able to speak with reference to the pressure of water which there is in the pipes at Liverpool?—Only in a general way; our mains run from 36 to 6 inches.

7480. Upon all those mains there are hydrants affixed?—Yes; there are very few plugs in Liverpool.

7481. What is the height of the warehouses in Liverpool?—Some are 80 feet high.

7482. Do you find that you are able to use a hose attached to those hydrants efficiently for extinguishing a fire in buildings of that height?—Yes.

7483. So as to get a good jet of water?—It depends entirely upon what part of the town we are in; the lower the part of the town the more pressure we get, but then we back up our water supply by pumping stations. We have the Kensington Reservoir, and at Bootle we have a pumping station from wells; and when a fire takes place we have only to open the valves and we can direct the water to any locality we think proper. When we require more water we signal to a station where they can increase the pressure.

7484. In fact, your water supply and your appliances for extinguishing fire are all connected under the same authority, are they not?—No, the water belongs to the corporation, which is a distinct body from the police.

7485. Are you connected by telegraph with the water stations?—We have telegraphic communication with the water stations, but we have always a waterman at the fire station, who goes with the engines, who has a general knowledge of all the mains about Liverpool. He is stationed at the chief stations, and when a fire takes place he goes with the engine.

7486. Have you to signal for him to the chief station when the appliances go from one of the other stations to a fire?—No, we have special marks for the hydrants in Liverpool, whether a single or a double, and the firemen can tell which they are, and we have tools with the engines so that the firemen can turn on the water.

7487. The firemen in Liverpool are themselves acquainted with the whole of the water arrangements?—Yes, partially.

7488. And you experience no delay in getting a proper supply of water to any given point?—No, unless it is in the upper part of the town where we have not the pressure, and then we have to wait until this turncock who goes with the engine shuts off some valves or services to give us more pressure.

7489. Therefore, you are dependent for your pressure entirely upon this one waterman?—The firemen all know the mains; they are taken round, and they inspect the hydrants themselves to see that they are clean; there are so many told off to become acquainted with the mains.

7490. Practically, your firemen are themselves, to a certain extent, acquainted as the turncock is with the services?—Yes.

7491. And I suppose you have not found any delays arise from working the system as you do in Liverpool?—Yes, we do sometimes. If a fire is in the upper part of the town we have to wait until we can get an engine to work, but that is a very unusual thing.

7492. That is in consequence of the want of pressure?—Yes.

7493. You cannot speak of what the pressure is?—The services go from 15 lbs. to 20 lbs., and from the mains we get from 50 lbs. to 80 lbs., but that all depends upon the part of the town it is required.

7494. Would you represent that the pressure is never below 50 lbs. upon the mains?—Yes.

7495. You cannot speak personally to that?—No, but we can always get two good branches off a main.

7496. Do you find that you are able to get a sufficient force of water at the time when the domestic supply is going on, when the principal draw is on the pipes?—We have a constant supply now, so that the drain is always going on for the services.

7497. Supposing you have a large fire, and are delivering a certain amount

Mr. *R. C. Yelland.*
17 July 1876.

of water from a couple of hose, would you find a great diminution in your pressure then?—We might do so for about a quarter of an hour, until we telegraphed to the out-stations to put on their pumps faster. We can get three good branches off a 7-inch main.

7498. Then, your water supply in Liverpool is more like the water supply in London; it is most of it dependent upon pumping engines; you have not a gravitation supply, have you?—Yes; we have a gravitation supply as well as the pumping stations, only we have water from the red sand stone, which is pumped up to the top of the town; and when that reservoir is emptied we have to telegraph to the pumping stations, and they put on more steam, and then we get more pressure.

7499. Are your policemen, who are your firemen, recruited from the general public, or are they one special sort of men like they are in London, namely, sailors?—I believe the police are recruited from the general public.

7500. Do you find that those policemen are generally efficient, and able to climb in the way which is required for the fire-brigade service?—I believe the firemen have mostly been connected with the sea; they are picked out for that purpose.

7501. Do you pick out for that branch of the force which you are going to devote to your fire-brigade service, men who have been connected with the sea?—Yes.

7502. I understood you to say that, whilst they were a part of the same force, there were a distinct body of 180 of the police who were drilled for the purposes of the fire brigade?—That is so.

7503. How many does your force consist of at Liverpool?—The force is about 1,200 men.

7504. And of those about 180 are firemen?—About 180 are firemen, with a superintendent, a deputy superintendent, and two engineers.

7505. Mr. *Hayter.*] Do those men go on beats like the other policemen?—There are three men told off for each of the small stations where there is the reel and hose kept, and they relieve each other. Then the rest are about the docks and the streets the same as ordinary policemen.

7506. *Chairman.*] How many of those firemen are on duty as firemen each day?—They are only on duty at the chief station; there are six men in the day time, and five at night, and one waterman; the chief superintendent lives at the station, and one engineer.

7507. And with regard to the other 18 stations, have they a permanently attached man on duty?—Yes, they have one man always on duty.

7508. And the other men who form part of the force are, according t the rounds of duty required, told off for patrol?—Yes, the same as ordinary constables.

7509. Is your fire brigade paid distinctly from the police force, or do they receive the same wages as ordinary constables?—The firemen receive 2 *s.* a week additional to the police pay; it is an inducement to the men to do the work.

7510. In fact it is a sort of reward?—Yes, it is an honour to be admitted into the fire brigade.

7511. The fire brigade is popular I suppose with the police force?—They all try to get into the brigade if they can.

7512. And you have found that sufficiently effective as a brigade for the purpose of extinguishing fire?—It is so.

7513. You were speaking from your own point of view as the head of the Salvage Corps; is there a distinct Salvage Corps established in Liverpool apart from the fire brigade?—Yes.

7514. Who attend the fires for a similar purpose as the Salvage Corps in London, namely, for the protection of property?—Yes, just so.

7515. Do the fire insurance companies in Liverpool contribute to the maintenance of the fire brigade in any way?—We pay 650 *l.* a year towards the fire brigade, but then we have the use of the appliances and men for the saving of salvage at cotton fires, and so on.

7516. You are able to use the fire-brigade force, are you not?—We have the free use of the engines, hose, and appliances for Salvage Corps purposes at fires. After a large fire, the fire hangs about in the cotton for about three or four weeks

weeks until it is removed to a field, and we have the use of their engines and appliances at those times until the salvage is sold.

7517. That contribution of 650 *l.* a year upon the part of the insurance offices towards the brigade is a voluntary contribution, is it not?—It is.

7518. It is not under any local Act that they are forced to pay that contribution?—No, it is a private agreement.

7519. Have the corporation a similar power to that which they have at Manchester, of charging a sum for the use of the fire brigade upon the owners of the houses burnt down?—Yes, I believe they have; there was some dispute a few years ago about that, and the corporation took to charging the fire insurance offices for attending fires, but they found it did not answer so well as the charging of a lump sum, and they compromised the matter by charging a lump sum of 650 *l.*

7520. What I understand is, that the authorities at Liverpool have under their local Act the power, as they have in Manchester, of charging the people for the services of the fire brigade, and as that was a tax upon the local offices they compromised those payments for the sum of 650 *l.* a year to free the people who were insured in those offices from this charge?—Yes, just so.

7521. Is there a charge made upon uninsured property when a fire takes place?—Their attendance in the borough is free; but if they attend a fire, and there is a fireman required to watch the premises, supposing the place to be uninsured, they have to pay for the fireman remaining.

7522. But the actual appliances for extinguishing fire and the use of them are not charged for under the local Act?—Not at all.

7523. It is only for watching the premises after the fire is supposed to be got under control?—Excepting they go out of the borough, when they charge the county with the expense.

7524. Is there any other point which you would wish to place before the Committee with regard to your system of working the fire brigade at Liverpool?—I think our system a very excellent system under its present management. There is no doubt that, on account of our reel stations being so close together, a vast amount of property is saved.

7525. Have you any knowledge of the time it has taken at different fires during the last year to bring the hose to bear upon them?—In some parts we can get there in two or three minutes after a fire has broken out.

7526. What is the course of action pursued; does your policeman on duty, when he sees a fire, go at once to the station?—All our stations are in communication with the chief station, and the chief police station is the chief fire station, so that we have notice immediately. The call first goes to the reel station which is nearest the fire, and in nine cases out of 10, when we get to the fire, the reel is at work, and the fire, perhaps, stopped; whereas if the fire were to go on unchecked until we got there it would be a very large fire.

7527. You find these 19 points spread over the town sufficient to bring the apparatus to bear within a few minutes of the breaking out of a fire?—There are some places where it might take longer than that, but we have our stations concentrated about the warehouse property and the docks, so that they are at hand immediately in case of a fire breaking out there.

7528. Are you able to give the Committee the number of fires at Liverpool for the past year, distinguishing those which were serious from those which were not so?—No, I cannot distinguish them in that way. I have the total number.

7529. I understood you to say there were 13 serious fires?—There were 13 fires in cotton warehouses; but of those 10 would be serious, and three would be called slight.

7530. What total number of fires had you in Liverpool last year?—In 1875 we had 397 fires; in 1874 we had 344; and in 1873, 312 fires.

7531. Have you anything to show how many of those fires were extinguished without much loss of property?—No, I have not; I was not aware that I should be asked the question, and did not prepare myself upon that point.

7532. Has your town increased in the last two years so as to justify that increase in the number of fires?—I should think so. They are putting up thousands of houses. I should think that there have been 3,000 or 4,000 houses built in Liverpool during the last two years.

7533. And your fires have increased from 323 in 1873, to 397 last year?—Yes;

Mr. *R. C. Yelland.*
17 July 1876.

Yes; but of that 367 we calculate that there were 419 damages insured, and 455 damages not insured.

7534. That is 870 odd damages for 367 fires?—Yes, 874 damages to 367 fires.

7535. Does that represent the spread of a fire from the house in which it originally began to other houses?—I sent down to inquire what was the percentage of insured and uninsured property, and this is the return they have sent me, so I take it that that must have included both building and contents in both cases of insured and uninsured property.

7536. It seems that there are a number of damages to the amount of between 800 and 900, which have occurred in 397 cases of fires, and you have stated that bringing those appliances to bear upon fires extinguished many of them before they became really serious; how are those damages then accounted for?—This return has doubled the number. In one fire the building and contents are reckoned as two, instead of one. That would just take one-half off.

7537. If what you state be correct that the system is valuable because of its extinguishing fires before they become serious, I suppose you imply by that that many of the 397 fires have been practically put out before they have gone beyond the rooms in which they began?—Yes, it is evidently meant by this that the 367 fires represented 419 damages, which shows that we had more damages than we had fires.

7538. And that 52 fires had gone into other houses?—Yes.

7539. Can you tell the Committee what is the system of hydrants which is used in Liverpool?—It is the ordinary screw hydrant.

7540. Not the ball-hydrant which they use at Manchester?—No, the ball-hydrants are very old fashioned. They are obsolete I should think.

7541. What is the expense of putting down your hydrants?—The expense is about 3 *l.* or 4 *l.* I think they are very simple.

7542. You cannot speak from actual knowledge as to their cost?—I cannot.

7543. Do your hydrants work very satisfactorily, or do they get out of order?—We never find them get out of order; they are examined by the firemen, turncocks as they are called; they go round and see that they are in order; they turn the water on, and turn it off again.

7544. Mr. *Forsyth.*] Do they do that every day?—No; they would turn on one district one week and one another.

7545. *Chairman.*] In fact, what you would represent to the Committee is, that a town is far better protected where you can get a constant supply with a hydrant service, and with a constant pressure, than under a system such as that which exists in London?—Quite so, and there would be a great saving of water too, because with us, as soon as a fire is extinguished, the water is turned off, whereas under the London system the water is running away in the dam, and you lose about two-thirds of it.

7546. Is there any other point which you would like to place before the Committee?—I think not.

7547. Mr. *Ritchie.*] What is the total cost of the fire brigade in Liverpool?—The total cost would be under 2,000 *l.*, and that would be allowing for the full wages of the 11 men who are constantly employed at the fire stations, and doing no other duty, and of the superintendent, the deputy superintendent, and two engineers.

7548. That does not include the extra wages, does it?—I have included the 2 *s.* extra for each man, but not any portion of the ordinary wages.

7549. You say that the insurance companies contribute 650 *l.* a year?—Yes.

7550. Is that in addition to the 2,000 *l.*, or a portion of the 2,000 *l.*; that is to say, is the total expense 2,650 *l.*, out of which the insurance companies pay 650 *l.*, or not?—I can only speak very generally with respect to the expense of the fire police, because I know very little about it.

7551. You have in Liverpool, with eight square miles, 19 stations and 180 men?—Yes.

7552. And you have in addition to that a constant supply of water?—Yes.

7553. What is the greatest distance between your stations?—I should think the greatest distance is about a quarter of a mile.

7554. Then you have no station that is more than a quarter of a mile distant from another, as far as you believe?—I do not believe we have.

7555. You

7555. You would consider, I suppose, as a practical fireman, that if your stations were removed so as to be upon the average a mile apart, that would add very greatly to the destruction of property in Liverpool?—I have no doubt of it.

7556. You believe that the loss by fire in London might be reduced considerably if the stations were nearer together than they are?—Decidedly.

7557. That 180 men that you have, taking the area of Liverpool to be eight square miles, gives you 23 firemen to the square mile in Liverpool, does it not?—I have not gone into the calculation.

7558. To whom is the superintendent of the brigade responsible?—To Major Greig, the head of the police.

7559. In the number of fires which you gave the Committee, did you include chimney fires?—I did not.

7560. I have not heard you say anything about fire-escapes; have you any fire-escapes in Liverpool?—We have had three lately; we run ladders to a fire; that is rather an old system, but they have just introduced three modern escapes.

7561. Where are the ladders kept?—At those 19 stations.

7562. It is the police who attend to those escapes, is it not?—Yes, the ordinary police run them.

7563. Do your men complain at all of overwork in any way?—Not at all; perhaps I should add that with my own permanent staff, which consists of 13 men besides myself, I adopt the system of allowing them a day's leave per week. They each take their turn, so that they have one day out of seven; that is to say, if I am not busy with fires.

7564. I suppose you consider that that is a necessary amount of leave, on account of the great amount of work they have to do?—Yes, and the great confinement which they are subject to. I find it very much better to give them a clear day than to let them have three or four hours a day.

7565. May I ask what the pay of your men in the fire brigade is, including the 2 *s.* extra which they get?—I think it is from 28 *s.* to 30 *s.* and 32 *s.*; an ordinary constable, I believe, enters the force at 24 *s.* There has been some addition, I believe, made lately to the scale of their pay.

7566. And in addition to that they get their uniform, of course?—Yes, and if they get their clothes damaged at a fire they have them replaced. An ordinary constable enters the force, as I say, at 24 *s.*; they all enter as ordinary constables at 24 *s.*, and then after they have entered and remained and progressed two or three years, they enter as firemen and get the extra 2 *s.* to their pay.

7567. How often in any one week has it come to your knowledge that a man has been kept out of his bed; has there been any special complaints about the men being constantly on night duty without getting to their beds?—My own staff are sometimes out of bed a week together.

7568. But I wish to understand what the regulations are with regard to the fire brigade?—I believe the fire-brigade men are never out of bed more than one night, because they have sufficient staff to relieve each other.

7569. They have sufficient staff to insure that the men shall not be out of bed more than one night in a week?—I believe so.

7570. Has the fire brigade a superannuation scheme?—It has.

7571. You have not a copy of that, I believe?—I have not.

7572. You have not found, I suppose, that any jealousy arises between that portion of the brigade which are firemen and that portion which are policemen?—Not the slightest.

7573. Mr. *Onslow.*] Is the water supplied to Liverpool only from one company?—It is not a company; it belongs to the corporation, and they get their sources from Rivington Pike.

7574. The water supply of Liverpool never was in the hands of a company, was it?—The water supply was formerly in the hands of companies.

7575. And the corporation have bought them up?—Just so.

7576. How long ago was that?—It was before my time. I have been there 10 years.

7577. Have you ever heard that there was any difficulty upon the part of the corporation in buying those companies out?—I never heard that there was.

7578. I should like to ask you to mention any large fire which you would like to put before the Committee stating how many steam fire-engines were employed

Mr. *R. C. Yelland.*

17 July 1876.

at that fire, how many hoses were applied to the hydrants; how many men were employed at that particular fire, and how many men were left for the further protection of Liverpool during that particular time?—It would be only in a very general way that I could answer your question; I could not give the details accurately.

7579. Can you tell the Committee how many men belonging to the fire brigade were at any one time employed for the suppression of any particular fire in Liverpool?—I should think we very often have 70 or 80 men engaged at one time.

7580. Would you give the Committee the largest number which you can recollect at any one time being engaged at a fire?—I should think from 70 to 80.

7581. Therefore, according to your recollection, notwithstanding the largeness of a fire, you have always had 100 men left for the further protection of Liverpool?—Just so.

7582. Can you tell me how many hoses have been applied at any large fire?—We have had 10 and 12 branches going off the mains besides the engines being at work.

7583. Besides how many engines?—Two steam engines.

7584. Have you never had more than two working at any one fire?—I think not.

7585. From what height is your water supplied in Liverpool?—I think the Kensington Reservoir is about 240 feet above the level of the lower part of the town.

7586. Not above high-water mark?—Yes, you might say above high-water mark.

7587. Is there any particular training of your policemen for fire purposes?—Yes, they are drilled for their duties.

7588. Are those men belonging to the fire brigade who get this 2*s.* extra a week liable after they have been some hours at a fire to be called upon for the ordinary duties of a policeman?—Not unless they were very much pressed; those men are allowed to go home, and have their eight hours off, and then come on duty again.

7589. What do you call a serious fire in Liverpool?—Such a fire as occurred at Brooks' Wharf.

7590. How do you distinguish a serious fire from a slight one; what particular standard do you adopt?—I should think anything causing over 1,000*l.* damage would be serious.

7591. If there were loss of life, would you call that serious, or not?—That would be much more serious.

7592. Would you put a fire down, in which loss of life occurred, as a serious fire?—There may be loss of life if only a window curtain burns. I issue an annual report, in which I distinguish between slight and serious fires.

7593. *Chairman.*] Will you furnish one of your reports to the Committee?—(*The same was handed in*).

7594. Mr. *Onslow.*] If there is a loss of life by fire, does it necessitate that you should report that fire as serious?—We do not call that a serious fire necessarily, because it may be only a room burnt out, or it may be a window curtain burnt.

7595. Have you any floats at Liverpool?—No, we have nothing excepting the tugs, which, I believe, have little donkey engines which they can get to work at times.

7596. But for the purpose of putting a fire out?—We have nothing specially for the purpose of putting a fire out.

7597. Sir *Henry Peek.*] Do I understand you to say that you are the head of the Salvage Corps?—Yes.

7598. And the Salvage Corps consist of yourself and 13 men?—Yes, as permanent staff.

7599. Who pays you?—The fire insurance offices.

7600. Are you paid by the fire offices from London?—No, from Liverpool; by the amalgamated fire offices.

7601. Is any part of the pay supplied from London?—The money is paid by the

the amalgamated offices; it is by the London offices as well as the Liverpool offices; they have branches all over the world.

7602. Do I understand that your duty at Liverpool is much the same as the duty of the Salvage Corps in London, namely, to go to a fire and protect the property?—Just so.

7603. You have no sort of connection, I suppose, with the fire brigade of Liverpool; you are appointed by the insurance companies, and paid by the insurance companies?—Yes.

7604. And so are the men?—Yes.

7605. Do they ever ask you, when the town is spreading, where new stations should be put?—It is not warehouse property; it is simply house property which is extending.

7606. A moment ago you stated that there were a great many more stations in the neighbourhood of the warehouses and cotton depôts than there were anywhere else; I would ask you, supposing there were to be new stations opened, would the authorities ask you where the new stations should be?—Yes.

7607. You are consulted?—Yes, to a certain extent.

7608. You are consulted as the mouthpiece of the fire insurance companies?—Yes.

7609. Do you attend the meetings of the Fire Committee?—No; the Fire Prevention Committee are members of the Watch Committee, and if Major Greig was going to open new stations he might probably ask my opinion before he did so as a matter of courtesy.

7610. And not as a matter of course?—No. I may say with reference to the question which you asked me about putting up new stations, the buildings are in Bootle, which is outside the borough, and there the local Board have bought a fire engine recently for the protection of this property.

7611. But the Bootle people are quite distinct from the Liverpool people?—Quite.

7612. Will you tell the Committee what the total cost of your Salvage Corps is?—The cost is from 2,200 *l.* to 2,600 *l.*

7613. Have you any idea of the average quantity of property which you have saved during the years you have been connected with it?—No; we do not make any average; but in one case alone I may say that our own fire offices estimated that we saved 15,000 *l.* in one warehouse; it was a sugar warehouse.

7614. Mr. *Clifton.*] I understood you to state that there were no steam floats in Liverpool?—There are none.

7615. Do you know whether the Watch Committee have ever considered whether it would be advantageous to have them, or not?—It is a matter more for the Mersey Docks and Harbour Board than for the committee.

7616. Do you know whether they have considered it?—I believe the matter has come under their consideration, but I do not think they have taken it up. About two years ago my opinion was asked about these floats, and I gave it, but I have never seen any result.

7617. What was your opinion?—That they should have these floats.

7618. What kind of a float would you recommend?—A small launch about 30 feet long to take her own engine on board; about the size of 1,000 gallon engine.

7619. What draught of water would a launch of that description draw?—She would draw about 20 inches or 2 feet.

7620. Laden with coal?—Yes; she would not take much coal.

7621. What depth of water is there along the edge of the river at Liverpool?—We have always plenty of water.

7622. The draught of water would not matter?—Not much. Of course the smaller the draught the more practical the float would become, because she could get closer to a fire.

7623. The superannuation fund of the firemen I suppose is the same as the superannuation fund of the police?—Yes, just the same.

7624. Sir *James Hogg.*] I think your evidence is principally with regard to the Salvage Corps; is that what you are more particularly acquainted with?—

Mr. R. C. Yelland.

17 July 1876.

No, I am just as much acquainted with the police as I am with the Salvage Corps.

7625. Do you know the working of the police?—Yes.

7626. What is the total cost of the police force?—I cannot speak as to that; I know the practical working of the police force.

7627. And you cannot give a definite answer with reference to what the cost of the fire brigade is?—No, I cannot.

7628. Nor what the extra cost is?—No; Major Greig is the authority who can give you that information.

7629. When you stated that the cost was 2,000 *l.*, that did not refer at all to the building of fire stations which are practically united with the police stations of any other stations, or anything else?—No; they have simply a small building at the police stations which they run the reel into, which would not cost 100 *l.*

7630. You have a large station?—We have a large chief station at Hatton Garden.

7631. All that costs money?—Yes, just the same as the London Fire Brigade.

7632. You did not take into consideration that your principal stations have places for the engines and hoses?—I was only peaking of the cost of the firemen and their appliances.

7633. Will you tell me what would be done in the case of a large fire when it happened to be the turn of a considerable number of the firemen police to be out on duty; would they be re-called?—Yes, they would be re-called to the fire, and other men placed upon their beats.

7634. What I want to know is this; do all the police have their duties combined together as police?—Yes.

7635. Then if it comes to be the turn of a great number of the firemen to go out on duty as police, practically your force of firemen in case of a very large fire would be very much reduced?—It would.

7636. Therefore in the case of a large fire you would have fewer men to cope with it until you had sent out and replaced them by policemen, who were not firemen?—Of the 180 firemen whom we have, perhaps there would be on an average 60 on street duty, besides those on station duty; and those 60 men would be available at once to go to this large fire if it was anything very extraordinary. The other men who were at home were called up to take the stations which those men had left, and they would go to the fire stations in case of another outbreak somewhere else.

7637. If you have 60 men out, and 60 other men ready, you would send the 60 men who would be at home to the fire, and the other 60 to replace them, whereby, practically, the town would be left without any protection from fire, would it not?—No; the town is always protected from fire, because we have 180 men; that is to say, three reliefs of 60 men; and there would be one 60 on duty at a time.

7638. Are the police duties all arranged with regard to the fire brigade, or without regard to the fire brigade?—Without regard to the fire brigade, with the exception of the out-stations, where there are three men on duty relieving each other alternately.

7639. In arranging the duties, is it so arranged that there should be always 60 men on station duty, 60 in bed, and 60 out on police duty?—I am only supposing that to be the case; but a great part of those firemen would be down in the docks.

7640. Then what you are stating is only supposition?—I have no doubt at all about it.

7641. You do not know it for certain?—I am not in the police force, so I do not know for certain.

7642. For all you know, there might be 120 of those police firemen out on duty in one night?—It is hardly possible.

7643. Do you know of your own knowledge that they divide up the men in some sort of way so as to afford relief in case of a fire happening at night?—Yes, I am sure of that.

7644. You stated generally that the firemen were chosen from sailors, if you could manage it?—We always prefer sailors.

7645. If

7645. If the policemen were a good sort of men, would you prefer them, or would you take a man who was a sailor who had not been a policeman?—I should prefer the sailor if he were just as good as the other in that respect. We take a man for his smartness.

7646. Do you think the policemen are able to go up a fire-escape 70 feet long and bring down a person suffocated by smoke?—I have no doubt of it.

7647. Are they drilled for that purpose?—Yes; they are drilled twice a week.

7648. Are they drilled in fire-escape duty?—Yes; they are drilled by the superintendent of the fire brigade.

7649. You stated that your Salvage Brigade were sometimes out of bed a week at a time?—Yes.

7650. Does that happen often?—Yes, because we have only a small staff. One half are on duty at night, and the other half by day. Perhaps they might have 300 or 400 men working at a time.

7651. When do you have 300 or 400 men on duty at a time?—When we have a large cotton fire we put on strangers to work out the salvage. Perhaps I might have 200 on in a day and 300 on in a night.

7652. And you pay them?—Yes.

7653. Then, practically, those 13 men of the Salvage Corps require to be supplemented occasionally by 300 or 400 auxiliaries?—Yes; they act as foremen to see the work done.

7654. Do you know the site of the Liverpool Reservoir?—I do not.

7655. Nor how much it contains?—No.

7656. I believe the whole of the flow is from gravitation?—Yes, from the Kensington Reservoir it is, but the other is supplied by engines.

7657. Do not the engines pump the water up to the reservoirs from whence it flows?—Yes.

7658. Therefore it is, practically, all by gravitation?—It is.

7659. When you are drawing off the water from the mains the engines are set to work to pump the water up in the reservoirs, so that they are able to preserve a consistent pressure?—All the reservoirs are kept full.

7660. So that, therefore, the hydrants are useful in Liverpool?—Yes.

7661. Without that pumping into the reservoir and the gravitation the hydrants would not be so useful; that is to say, if they were simply pumping into the mains it would be merely an intermittent pressure?—The pressure would not be so good as water under a constant system of supply.

7662. You stated that you had a pressure of 50 lbs. in the mains; that would represent a height of 100 feet, would it not?—Yes.

7663. And a pressure of 80 lbs. would represent a still greater height; that would give you a pressure to the tops of the warehouses, would it not?—Yes, we can get a branch on to the tops of our warehouses if they like to put the pressure on.

7664-5. But still at Liverpool you have engines?—Yes.

7666. Notwithstanding that you have this very high pressure and constant supply, you do not think it would be wise to give up the use of engines?—Certainly not; we always run an engine to a fire although we do not use it once in 12 months, because we never know where we may be called.

7667. The honourable Member for the Tower Hamlets wishes me to ask you how many more engines you think Liverpool would require if they had not got this constant high pressure system?—We should require double the number of stations; that would make 38 instead of 19 fire stations, and we ought to have at least a dozen steam fire-engines.

7668. How many have you got now?—We have three steam fire-engines, and, I think, 12 manual engines.

7669. I think you stated with regard to floating engines, that you thought it would be desirable to have such engines on account of the valuable property in the docks?—Yes.

7670. Have the united fire insurance companies made any representations to the Liverpool authorities asking them to be good enough to furnish them?—No, that is a matter for the marine underwriters; it is not a question for the fire offices.

7671. You stated that you thought Major Greig would always consult you with regard to alterations; has he at any time consulted you or not?—They

Mr. R. C. Yelland. 17 July 1876.

have made no alterations except in one case, and that is where one street was being pulled down.

7672. Therefore, in the last 10 years, I presume there have been no alterations?—There has been alterations.

7673. But you have not been consulted?—There have been no reductions; the alterations have been only in the form of increase.

7674. But you stated that there have been one removed?—In that case they were obliged to remove the station, and they moved it as nearly as possible to the old spot.

7675. Mr. *Hankey.*] Are you a member of the Corporation of Liverpool?—No.

7676. Are you here to represent the feelings or wishes of the corporation?—I cannot say. I was summoned here; I did not know what I was summoned here for.

7677. Do you consider yourself at liberty to explain to the Committee fully the views of the corporation respecting the fire brigade of the town?—Not at all. I am not at liberty to speak for the corporation.

7678. As far as you can judge, what is the time that elapses in Liverpool between an alarm of fire and the attendance of the fire brigade under the existing system?—I must know what distance we are to go before I can answer that question.

7679. It would be impossible to say exactly what distance you might have to go, but the London Brigade generally state that they can be at a fire within a certain number of minutes; I did not know whether there was an arrangement of that kind, by which it was known that the attendance of the fire brigade of Liverpool could be relied upon within a certain time?—We can get to a fire two miles from our station in 10 minutes.

7680. *Chairman.*] Your 19 stations are scattered over Liverpool so as to cover the whole area?—Just so.

7681. A fire occurring anywhere must be within a given distance of one of those 19 stations?—Yes.

7682. Therefore, can you state how long it would take from any of those stations to reach a given fire?—I think, after receiving a call, the engines could be at any fire in a given part of Liverpool within five minutes.

7683. Mr. *Hankey.*] I understand that your engagement relates to the Salvage Corps, and that you have nothing to do with the general arrangements of the fire brigade?—I have nothing to do with the arrangements of the fire brigade.

7684. Can you state in what proportion of fires in Liverpool is a horse-engine or a steam-engine required?—We very seldom use an engine at all, although we always take it to fires.

7685. Mr. *Stewart Hardy.*] With regard to the question of whether the water supply is by gravitation or pumping, I see, in the report of the Metropolitan Board of Works Committee, who visited Liverpool, that they say the supply of water is by gravitation for two-thirds of the supply, and one-third by pumping from pumping stations?—That is so. We have pumping stations for two of the reservoirs, but two are by gravitation.

7686. Supposing the reservoir is of any decent size whatever, it would give a gravitation pressure for a considerable time without making any difference whether you pump into it or not, would it not?—But the fuller you keep the reservoir the more pressure you get.

7687. You stated that you had sometimes a deficiency of pressure after a quarter of an hour; does that arise from the reservoir not being kept full?—It arises from the fact that we have 15 branches where we ought only to have five or six.

7688. Therefore, under this constant pressure you have frequently a failure of water shortly after the commencement of a fire?—No, we do not have a failure of water.

7689 You stated that you frequently after a quarter of an hour have had a failure of pressure until you telegraphed up to the pumping station?—We can always work four good hydrants from the main until we telegraph up, and then when we have telegraphed up we can work 10 or 12.

7690. Then you consider that until you telegraph you have a want of pressure?—We have a want of water, because we can use all the water we get.

7691. Do I understand that to be a common occurrence?—No, it will be a very uncommon occurrence.

7692. And only in a limited part of the town?—Yes.

7693. You say now that there is never any want of pressure?—I do not say never, but very seldom.

7694. I understand you to state that your fire-brigade stations are within a quarter of a mile of each other?—Yes.

7695. You say that there has been an abundant supply of water, and that during the last three years the number of fires has increased from 312 in 1873 to 397 in 1875, and you will explain that by saying it is attributable to the growth of houses?—Yes.

7696. Is it not the fact that in Liverpool there would be 100,000 houses?—Yes.

7697. Therefore there has been an increase of 2 per cent. in the number of houses?—Yes.

7698. But at the same time there was an increase of 25 per cent. in the number of fires?—We cannot account for that; next year we may have only 250 fires.

7699. Mr. *Hayter.*] You stated that the superintendent of police is responsible to the chief of the police?—Yes.

7700. And the chief is responsible, I suppose, to the Watch Committee?—Yes.

7701. That is precisely the same system as at Manchester?—Yes, just the same.

7702. You stated that your men had one day's leave in seven; did you mean a leave of 12 hours or 24 hours?—I have to vary that; some I give 24 hours leave to, while to others I only give 12 hours.

7703. You stated that ordinary policemen are recruited at 24 *s.* a week, did you not?—Yes.

7704. And then they are two years before they become firemen?—No, that is not so; they take a man according to his ability for a fireman.

7705. Would you give me the age at which you think a man ought to be retired from the duty of a fire-brigade man; when does he lose the nerve and activity necessary for his more active duties?—I do not think any man ought to be a fireman in the more responsible situations after he is 50 years of age.

7706. Is he fit for the duties up to that age?—It is as much as ever, if he is. I have had 20 years of it now, and I am not anything like the man I was. I am only 40.

7707. You would not like to have so long an age as that as the general age throughout the brigade, would you?—Yes.

7708. What system exists in the fire brigade of superannuating the men or getting rid of them?—It is the police superannuation fund which is applied to them.

7709. Those men, being policemen, would get the benefit of that fund?—Quite so.

7710. Can you tell me at about what age the men get the benefit of this retiring pension?—It used to be at a certain age; I think 55 years; but now they have to serve a certain number of years, because the other system was unfair. If a man entered at 30 and served up to 55, he would only have served 25 years; whereas if another man entered at 20 years of age he would have to serve 10 years longer before he got his superannuation.

7711. Mr. *Forsyth.*] As compared with London and Manchester, is not Liverpool exceptionally well off in the position of its reservoirs as regards height?—No doubt of it.

7712. Rivington Pike is the source of its supply?—Yes.

7713. Do you know Everton, which is very much higher than the lower part of the town?—Yes, we have one reservoir in Torr-street.

7714. And another in Kensington?—Yes.

7715. That would give you an exceptionally high pressure in Liverpool compared with what you would get in Manchester or London?—Quite so.

7716. Therefore the use of hydrants would be more likely to be advantageous in Liverpool than they would in a place where the pressure of water was not so great?—I think hydrants are very useful in places where the pressure is not so strong.

Mr. *R. C. Yelland.*

17 July 1876.

7717. Do you remember the great fire which took place in Liverpool a year or two ago, called the Landing Stage Fire?—Yes, I was at it.

7718. Was any use made of the River Mersey for the purpose of extinguishing that fire?—Yes, there were two steam fire-engines upon the River Mersey.

7719. Did they belong to the corporation?—Yes.

7720. How soon did the steam engines upon the Mersey begin to play upon that fire?—The manual engines were the first to play upon that fire.

7721. Were steam engines employed at all upon the land on that occasion?—They went off upon the tugs, and worked from the Mersey. We got them down upon the north end of the stage and put them on floats.

7722. Were hydrants used there at all?—Yes, from the pier head, but we had a tremendous length of hose to get to it, because it was in a state of transition at the time.

7723. How soon after the outbreak of that fire were you able to bring the appliances to bear upon it?—It would be about four minutes from the time we got the alarm.

7724. What was the length of the hose that was obliged to be used?—Some hundreds of yards.

7725. At the end of that hose what jet did you get?—The jet was about 30 feet from the nozzle.

7726. But in that case the water would be going horizontally, and not up, as in the case of a building, would it not?—It would fall in that case from the main 30 feet.

7727. *Chairman.*] What difference would the length of hose make?—It would make about 20 feet difference to it.

7728. Mr. *Forsyth.*] But still I understand the jet was not raised vertical, but was in fact depressed?—Yes, it was.

7729. Mr. *Stewart Hardy.*] Have you any real floats at Liverpool?—No, they simply placed land steam-engines on board tugs for the purpose of getting at the fire.

Lieut.-Colonel *Edmund Yeamans Walcott Henderson*, C.B., R.E., called in; and Examined.

7730. *Chairman.*] You are the Head of the Police in London?—I am.

7731. And as such I suppose you can speak with some experience with reference to the working of the fire brigade in the metropolis?—To a certain extent.

7732. Your force of policemen at present assist the fire brigade materially in preserving order and keeping an open space for the working of their engines and appliances, do they not?—That is one of their principal duties.

7733. At present, as you are aware, the stations of the fire brigade are limited in number to the number of 46, I believe, throughout the town?—Yes.

7734. Have you ever considered the matter with reference to whether the police stations might be in any way used as adding to the number of places where you could either keep appliances for fire brigade purposes or as points of call for the purpose of assisting the fire-brigade?—I think the fire brigade might get a certain amount of assistance by having the principal stations of the police divisions connected with the fire brigade stations of that district; that advantage of course would be confined to the cases in which the fire was nearer to the police station than it was to the brigade station; and I think you might also keep a certain amount of fire apparatus at the police stations, which might be available in a case of emergency.

7735. I suppose that as you multiply the points not only from which calls can be made to fires, but from which you can take appliances for extinguishing fires, you naturally reduce the time occupied in bringing those appliances to bear upon a fire?—Clearly; the great object is to get the information as quickly as possible to the brigade.

7736. And

7736. And therefore by connecting the police stations and the brigade stations telegraphically together, you would multiply by the number of police stations the points from which calls might be made, and from which the appliances stored might be brought to bear upon fires?—Certainly.

7737. Do you think there would be any advantage in having a certain number of your men, who might be sufficiently drilled to take, say, a manual engine if it were placed at a police station to a fire, so as to begin to work upon that fire until the brigade arrived?—My own impression has always been that the duties of the police ought to be confined strictly to their own special duty, namely, that of protecting life and property, and preserving order, and giving the fire brigade an opportunity of getting their engines into play under any circumstances. If you had a body of police for the purpose of extinguishing fires, they would be a separate body to all intents and purposes. I hardly think it would be possible to drill the whole body of police to the use of ordinary engines.

7738. What I meant was this: the manual engines are more easily worked than the steamers, of course?—Yes, clearly.

7739. I wish to ask you whether it would be possible, if you had a manual engine stationed at a police station, so to instruct a certain number of your men as that you might have a reserve at the station able to take the engine to a fire?—You must have a special body for that office, because our own reserve are constantly changing from day to day, and you could not expect to have a special body there for the purpose of working those engines unless you had them always there, and kept them in readiness.

7740. Do you think there would be any difficulty in instructing the police in the use of an ordinary manual engine?—I do not think there would be any great difficulty in doing so, except that I confess I am rather doubtful how far it is desirable to impose fresh duties upon the metropolitan police.

7741. You would limit the use of the police stations to using them as telegraphic points for calls to the fire brigade stations?—Quite so.

7742. That would not assist the idea of multiplying the points from which appliances could be taken to fires?—No; unless, as I said, you had a certain quantity of fire apparatus at the station which could be used without any special drill.

7743. You mean that you might keep hose and other appliances as they do at Manchester and other towns at the police stations, which the policemen, without any particular instruction, could apply to the pipes, and so bring them to bear upon a fire before the fire brigade could get to work?—Yes; you might gain a certain advantage in that way, I think.

7744. In fact, supposing a constant supply and a system of hydrants easily to be understood were established in London, you could carry out the system which has worked in those other towns where the police, using the hose, can very often extinguish a fire before the arrival of the fire brigade?—Quite so; I understood that you were speaking of the present system. If you had hydrants, with a constant pressure of water, the matter would be very much simplified; because, as I understand, it is simply the screwing on of the hose, and the very first constable who came up who had charge of it could do that.

7745. Suppose that system to be established, and the town to be under constant supply, with hydrants attached, and that you could use hose so as to cope with a fire before the engine arrived in many instances, do you think that the police stations might be used advantageously for that purpose, and that appliances, such as hose, could be placed there, which the police could use prior to the arrival of the fire brigade?—I see no objection to that whatever.

7746. You have a system, I believe, of what are called fixed points throughout the town?—Yes.

7747. I believe there are at present as many as 245 throughout London?—There are 280.

7748. Are men stationed on duty at those points throughout the day and night?—Only I think at very few of them during the 24 hours. The majority of them are on duty from nine in the morning till one o'clock the next morning, when the public-houses are closed. At some of the points the policemen are only on duty for eight hours; it depends upon the different requirements of the localities.

7749. Would it be possible to establish any number of those fixed points at which

Lieut.-Colonel *Henderson*, C.B., R.E.

17 July 1876.

which a man could be always on duty, at which fixed points you could place those appliances, and thereby multiply the number of call points throughout the town?—It is a mere question of money; there would be no other difficulty.

7750. There would be no difficulty in that, nor would there be any difficulty in a man who was there stationed using those appliances for extinguishing fires?—Quite so; he might have a supply of hose, and with a system of hydrants it would be very easy for him to make use of them.

7751. If that were the case and a constant supply were given you could not only by your stations, but by your fixed points, multiply the points from which calls could be made, and from which appliances could be taken to the point where a fire had broken out?—Quite so, except that I should guard myself by saying that we have quite as much as we can do at present in performing our proper duties as police, especially when you come to a large fire. Therefore, if the men are to be employed as firemen they cannot be employed as policemen; the question would arise how far could they perform those duties without neglecting their proper and indispensable duties as policemen.

7752. What I meant to suggest with regard to these fixed points was that the policeman at the fixed point might be very close to the outbreak of a fire; if he had the appliances at the fixed point he would not be absent from duty more than a few minutes, because he would take his appliances and attach them to the hose, and bring the hose to bear upon the fire, and before he had been there more than a few minutes the fire brigade would arrive at the scene, because he would have telegraphed to your station, and the communication would have gone to the brigade station?—That is so.

7753. Therefore, although his absence as a policeman might be very short, his utility would be enormous as bringing the appliances to bear upon the fire when it first broke out?—Yes, but you will recollect in the case of a fire the first thing that occurs is the assemblage of a lot of more or less disorderly persons who are always ready to commence a system of plundering if they see any chance of doing so, and it is the duty of the policeman to see to that.

7754. That would be the duty of the policeman upon the beat, would it not?——His duty would be to go to the fixed point, but in point of fact he would very likely have to go for the fire engine.

7755. The fact of the information being telegraphed to you that he had left his fixed point for a fire would have the effect of causing you to put another policeman on that duty, would it not?—Yes.

7756. So that it would be devoting another man to the duties of the fixed point until the fire brigade arrived?—Quite so.

7757. In that way your men would very materially assist the fire-brigade system?—I should say they would.

7758. And you see, as I gather, no objection to that?—I cannot say that I do.

7759. Have you ever considered the question of whether the fire brigade might be a separate and distinct portion of the police force?—I cannot say that I have ever considered the matter until the question was raised in the recent debate.

7760. I believe that the idea has been mooted once or twice?—I think it was mooted when the last Committee of the House of Commons sat in 1862, but practically I take it that, supposing the fire brigade were transferred to the police, it is a mere question of jurisdiction; it would remain a separate body.

7761. I meant that it should be a separate body, but forming a part of the police force; I wished to know whether you had thought of that condition of things?—It appears to me to be a mere question of jurisdiction; it might be better managed, or it might not. I do not know that there is any special advantage to be gained by placing the brigade under the jurisdiction of the Commissioners of Police.

7762. But you think the police might materially assist the brigade in the way you have indicated, even whilst they remained as they are at present under a different authority, and as an independent body?—Quite so; they would be so whether the fire brigade was under the Commissioners of Police, or whether it were not. What I meant was, that if the fire brigade were attached to the police it would remain as it is now, a perfectly distinct body.

7763. And you do not think it would be possible to unite their duties up to a given

a given point, if the fire brigade were a portion of the police force, so that your reserves at each station might be able to take a manual engine to a fire within a given radius from the station?—That arrangement might be carried out whether the fire brigade were transferred to the police or whether they remained as they are at present.

7764. That might be carried out if the hydrants were placed throughout the town, and you might multiply the points of call and the appliances by placing them at the police stations and fixed points throughout London?—It might.

7765. And you would agree in that case that a part of the system should be telegraphic communication set up between not only the fire-brigade stations and the police stations, but between the stand points and the police stations?—Quite so.

7766. And under those circumstances you think it might be worked without detriment to the police force?—Yes, I think it might.

7767. Is there any other point which you would wish to place before the Committee?—I am not aware that there is.

7768. Always bearing in mind that the first duty of the police is the maintenance of order, and that, therefore, only so many of them as are not necessary for that maintenance should be at all taken away for fire-brigade purposes even for a time?—Quite so, because even at present if a fire breaks out on a beat we have to take off men from other beats to preserve order; we take them off alternately, so that each man has two beats under his charge instead of one.

7769. I suppose you have reserves at your stations?—A very small number of reserves; they are required to take the place of those who are on leave or sick.

7770. Do you think it would require an addition to the metropolitan police force if the stand-points had to be occupied during the whole of the 24 hours, and the men had to be kept there with those duties added to their other duties?—Certainly, if the men are to be kept there 24 hours, that means an additional constable for each point. Where we have two now we should require to have three.

7771. Your present hours of duty are eight hours?—Yes.

7772. And you would require three constables for each point?—Yes, where we have now two.

7773. But the additional cost of adding a certain number of constables as fixed-point constables aiding the brigade would be infinitely cheaper than adding to the number of fire-brigade stations, would it not?—It would not be cheaper to the police fund.

7774. But I mean cheaper to the metropolitan ratepayer?—Yes.

7775. Mr. *Ritchie*.] If you were not able so to arrange your police force as to have these men at their fixed points the whole day, still the mere fact of your having those appliances at the police stations without fixed points would materially assist the fire brigade, would it not?—It would.

7776. Even apart from the fixed points altogether?—Yes.

7777. How many police stations are there in the metropolis?—There are 152; 75 being within the boundary of the Metropolitan Board of Works, and 77 beyond.

7778. Still that would most enormously of course increase the number of fire-brigade stations if the police stations were added?—It would.

7779. You appeared to draw a distinction between making use of the police with the present intermittent service and with the high-pressure service, and you stated that whilst it would be easy to make use of the police under the system of constant supply, when they could make use of hose, yet you saw great difficulty in the way of their being made useful under existing circumstances, supposing they had to take out a manual engine?—Yes, I have never heard any complaints, except that the water was not ready. The police have generally got the ground clear quite in time. The police could not work it under the present system of mains. You must have a turncock. You cannot drill the police to that service.

7780. But as has been stated by some witnesses, a very little water supplied from a hand-pump, which can be applied from a bucket of water, would very often extinguish a fire in a few minutes, whereas it would take a great many engines to do so if the fire went on for a quarter-of-an-hour, and therefore what I am endeavouring to ascertain is this, whether under the existing circumstances the police would not be of considerable benefit at the first outbreak of a

Lieut.-Colonel *Henderson*, C.B., R.E.

17 July 1876.

fire, even if they carried a hand-pump?—But they must have a supply of water.

7781. But I understand these hand-pumps can be worked by putting the hose in the water-butt or cistern?—I see no objection whatever to keeping a small hand-pump at the police stations which could be used readily.

7782. So that if hand-pumps are useful in extinguishing fire at the outbreak, you see no objection to hand-pumps being kept at the police stations, and the police making use of them till the fire brigade come?—Not if they can get a supply of water.

7783. The police would require very little training to direct a hose on to any particular point?—No; I think the mere screwing on of a hose to a hydrant is a thing which any handy man would learn in a very few days.

7784. I suppose your experience does not lead you to make any suggestion to the Committee with regard to any different arrangements at fires from those which already exist?—No; I think the present arrangements are very good; the police always work very harmoniously with the fire brigade, and as far as my knowledge goes the fire brigade is very well worked and very well officered.

7785. And you do not believe any jealousy would arise from the police assisting the fire brigade, even although they were retained under their respective different managements?—I cannot see why there should be any reason for any jealousy.

7786. Mr. *Onslow*.] Do you believe that if the number of your police were increased in the direction in which the honourable Chairman has been putting these questions, there should be a *pro tanto* diminution in the number of the fire brigade?—That is merely robbing Peter to pay Paul. I should think the fire brigade as an institution is small enough as it is for such a large town as the metropolis.

7787. Therefore you do not think that by increasing the police force you could decrease the fire brigade?—No; as far as I am able to form an opinion, I think the fire brigade is rather small as it is.

7788. Then, according to your opinion, even with the system of constant supply, and a sufficiency of hydrants all over the metropolis, the result of your evidence is to this effect, that you do not think that there could be any decrease in the present number of the fire brigade, and that you must have a certain increase in the police, but that there would be a considerable diminution of serious and other fires?—If we were to carry out the views which I understood the honourable Chairman to convey, we must have an increase in the police force, and with reference to the diminution of fires, I think we might fairly expect that result.

7789. Sir *Henry Peek*.] You have a well-defined system of superannuation in the police force, have you not?—Yes.

7790. Which works well?—Yes, it does.

7791. And gives satisfaction all round?—Yes, excepting on one point, which is a moot one in all the police forces in the country, namely, that there should be a certain period of service at the end of which the men should be able to claim their superannuation, whether they are incapacitated or not. That, I believe, is the only point in which the metropolitan police are not perfectly satisfied.

7792. And that, after a certain number of years, the men ought to have a pension, whether their character is exactly what you would wish or not?—They cannot have a pension unless, ever since they joined the force, their character has been good all round, but their wish is that at the end of a certain period of service they should be entitled to claim their pension, irrespective of anything.

7793. But I understood Captain Shaw to say that, after a man had had 20 years' satisfactory service, for such a thing as getting drunk, it should not be possible to deprive him of that earned pension; is that your idea?—That question has been mooted too, that a man should not lose his pension after a certain term of service, whatever his conduct was. I have never given any adhesion to that view; but the general claim is that, supposing a man's conduct has been good for 20 or 25 years, whatever his state of health is, then he should be entitled to claim his pension, and take it, which he cannot now do unless he is incapacitated. I rather think the late Home Secretary, the present Lord Aberdare, was inclined to view that point favourably; but of course that would require a special Act of Parliament, and it has not gone any further.

7794. Do you, from your general knowledge, suppose that the duties of a fireman are more onerous or more risky than the duties of a policeman?—It is rather an invidious comparison. The police run great risks sometimes, and of course the firemen do also, but possibly, generally speaking, you would say that a fireman's life was a more hazardous one than a policeman's. In some of the rough parts of the town our men are assaulted very frequently; but taking the police as a body, I should probably say that their service was the less hazardous to life.

7795. In your judgment the firemen would not be unreasonable in expecting that any advantage given to the police should be given to them?—Certainly not.

7796. Did I understand you, in answer to a question from the honourable Chairman, to give it as your general opinion that the transfer of the fire brigade to the police would result in a pecuniary benefit to the metropolitan ratepayers; do you think that the two services together could be worked more cheaply than if they are continued as they are now?—No, I do not think they could; if they were transferred to-morrow to us, I do not think there would be any reduction in the cost.

7797. You see no particular advantage, especially with the present complex supply of water, in any amalgamation at all?—Under the present existing circumstances, I cannot say that I do.

7798. Mr. *Clifton*.] May I ask you whether, if a policeman on his beat gets an alarm of a fire, he is able to leave his beat?—He is bound to get a messenger as quickly as he can and send for assistance to the nearest police station or fire-brigade station, and if he cannot get that messenger, which is not usual, he would proceed himself, but his business is to protect the property, regulate traffic, prevent a crowd assembling, and so forth, and to get all the assistance he can.

7799. Does he help to run the fire-escape himself?—No, the police have been hitherto strictly confined to their own duties, except in cases of emergency.

7800. Still there are times of emergency when a policeman may leave his beat?—In case of an outbreak of fire, if he cannot get a messenger, he would do so.

7801. I think the police help at fires now, do they not?—They may occasionally, but as a rule they are strictly confined to police duties proper.

7802. The police are not under orders not to help, are they?—No, it is at the discretion of the officer in charge of them of course.

7803. If their clothes were injured in helping at a fire, would they have to make good the injury themselves?—I do not think I have ever had the question raised, but if their clothes were destroyed they would have a claim upon the police fund for their renewal.

7804. Sir *James Hogg*.] I think from what I have heard of your evidence you are of opinion that the police had better be confined to their own duties, namely, the protection of life and property in the metropolis?—I think they had better be confined to strictly police duties.

7805. In case of a fire they might now and then lend a hand, but not be used as firemen?—That has always been the rule of the police force.

7806. As regards a point which the honourable Chairman asked you about, namely, the manual fire-engines, that would necessitate the enlargement of your stations, would it not?—No, there would be no difficulty about doing that at all the principal stations; the manual engines are not very large.

7807. The duties of the police take up all their time now, do they not?—The police have plenty to do.

7808. How long does it take to drill a policeman for his ordinary duties?—Fourteen days.

7809. You would be obliged, would you not, to add an extra set of drill if the police were required to work these manual fire-engines?—I should think very little would teach a handy man to use them; I do not think there would be any serious difficulty about that.

7810. Do not you think it would answer all the purposes, supposing you were to have telegraphic communication between the police stations and the fire-brigade stations?—That would add very much to the rapidity of communication to the fire-brigade stations.

Lieut.-Colonel *Henderson*, C.B., R.E.

17 July 1876.

7811. And that would bring the people whose duty it was to cope with the fire?—That would bring the brigade to cope with the fire.

7812. With regard to these points of call, do you know how many there are?—There are 245 fixed points.

7813. And you stated that a good many of them were occupied only for a certain portion of the day?—The majority of them are from nine in the morning to one a.m.

7814. And to make those fixed points thoroughly efficient what would be required to be done?—To make them thoroughly efficient you would be obliged to have an additional man from one o'clock to nine in the morning.

7815. You would be obliged to have a telegraphic apparatus placed there?—We should put that in a box like the pillar-post.

7816. You could not always have a man there?—The man is always within a few yards of the spot, and if he goes away there is another man placed there.

7817. You stated that the police had quite enough work of their own to do?—As a rule we have quite enough to do to perform our own work.

7818. Have you thought, supposing this extra duty were imposed upon the police, how many extra police it would require?—I do not know, but I should think the existing force might probably work them for a few minutes until the fire brigade arrived. An increase would be required if the stand-points were to be occupied all day and night.

7819. Upon the whole, with the present supply of water, you consider that it would be impossible for the police to use the apparatus effectually?—As you know, under the present system, the fire brigade are generally at the scene of a fire as soon as the water supply is turned on; the complaint, as far as I have understood it, is that they are occasionally short of water.

7820. So that practically everything is done which can be done for the protection of the metropolis against fire?—I think so.

7821. I think you stated that the police worked generally in harmony with the fire brigade?—Yes.

7822. Supposing this arrangement were made, have you ever thought how much below the present proportion of serious fires, which is now 11 per cent., this precaution would reduce that proportion?—That is a matter of opinion; of course the more you increase the facilities for extinguishing fires the more you reduce the proportion of serious fires.

7823. You have not thought the question out?—I do not think you could think it out; it must be a matter of experience.

7824. Mr. *Hankey.*] Do you consider it any essential part of the duty of the police in a large town to protect life and property against fire as well as to protect life and property against any other risk?—No, I have always held that the protection of life and property against fire is a special duty.

7825. And not a duty connected with the police?—Not necessarily connected with the police. It is a matter of administration which of course rests with those whose business it is to arrange these matters.

7826. Do you think there would be any objection to that duty being connected with the duty of the police?—I do not know that there is any objection; as I have said before, I think it is a mere question of administration. It might be done better under the police or it might not.

7827. You are aware that the Committee which sat in 1862 upon this subject recommended that the fire brigade of London should be placed under the metropolitan police?—I understand so.

7828. And that Sir Richard Mayne entirely approved of that proposal, and had a scheme by which he thought it could be practically carried into effect?—He did.

7829. Have you ever looked into that scheme?—I do not think that I ever saw any special scheme. I think his idea was simply that the fire brigade should be merged in the police, and should be placed under the charge of the Commissioners of Police.

7830. And you do not agree with him in that idea that it was desirable to amalgamate the two services?—I do not say that. What I say is that even if that were done, the Metropolitan Fire Brigade would be as it is now, a perfectly distinct body from the police, and it would be merely a transfer of the jurisdiction

tion from the Metropolitan Board of Works to the Metropolitan Police Commissioners.

7831. You are aware that it has been stated that both at Liverpool and Manchester it is part of the municipal arrangements that the town should be protected from fire by the police; do you see any reason why London should be an exception from that rule which is adopted in the two largest towns after London in England?—In those towns the police and the fire brigade are under one body. That is the Corporation. In London, on the other hand, the system is entirely different. I do not see any necessary connection between the fire brigade and the police.

7832. You do not think there is any necessary connection between the protection of life and property against fire and protection against other risks to which life and property are subject?—No; I think the protection of life and property from fire is a separate business entirely, and must remain so, because, as I have said before, the fire brigade must remain a separate and distinct body from the police.

7833. Do you know what arrangements there are for putting out fires in any continental towns?—I do not.

7834. Mr. *Stewart Hardy.*] With your great experience, I wish to ask you is there any defect, in your opinion, in dealing with fires in the metropolis sufficient to justify a large expenditure being incurred in regard to their extinction?—The only complaint I have heard is an occasional deficiency of water; that the fire brigade were kept waiting for water.

7835. We have had it in evidence that there are only 35 cases of late arrivals of the turncocks, or of any deficiency of water in 1,500 fires in the year, therefore could it not be said on the other hand that there are 1,450 cases of an engine arriving too late after the water has been supplied?—I could not say that.

7836. When it is reported that there is a deficiency in the supply of water, that it is not ready before the arrival of the engine, it does not follow that there is any real deficiency; but, however that may be, even in the case of water, do you think that there is in the metropolis such a failure in the system of attacking fire as to justify any large alteration or expenditure in making further provision?—I certainly think, looking to the immense interests which are at stake in the metropolis, that the present arrangements for the extinction of fires are not so extensive as they ought to be.

7837. Would you recommend that the fire brigade should be added to?—I hardly feel in a position to give an opinion upon that subject; I should think you might have more fire-engine stations, and, consequently, I suppose that would involve an increase in the fire brigade.

7838. Are your police stations so placed that they would be advantageously situated for putting more engines at?—A great many of them would be, no doubt, very valuable adjuncts to the fire brigade.

7839. Are not many of them in the immediate neighbourhood of the present fire-brigade stations?—I could hardly answer that question off-hand. In this centre part of the town all the stations are so thick that I should think probably in the middle of the town they would be near each other.

7840. How far apart, upon the average, are the police stations?—It would be impossible to say.

7841. But you could give a sort of average as we have had from Liverpool, where they are a quarter of a mile apart?—Within the Metropolitan Board of Works district the stations might be a mile-and-a-half apart.

7842. How many are there altogether?—There are 152 altogether, I think, in the metropolis.

7843. You think that in most of those stations provision could be made for housing an engine without any great expenditure or trouble?—Quite so.

7844. So that if it were thought desirable to make additional provision, housing for the engines could be found at the different police stations, if lodgings for the men could be found in the immediate neighbourhood?—As I said, I do not see any difficulty in our having those manual engines at the police stations and working them with the existing force at the police stations.

7845. An honourable Member wished me to ask you whether you think it would be advantageous to amalgamate the bodies of firemen and police, so that

Lieut.-Colonel *Henderson*, C.B., R.E.

17 July 1876.

in the case of large riots, like the Hyde Park riots, they could be utilised as one body?—I think that would not be desirable; I do not think that the police could be used as firemen or the firemen as police.

Captain *William Charles Harris*, called in; and Examined.

Captain *Harris*.

7846. *Chairman.*] You are one of the Assistant Commissioners of the Police of the Metropolis?—I am.

7847. How long have you held that appointment?—Upwards of 20 years.

7848. You have turned your attention more than once, I believe, to the fire brigade of the metropolis?—I have.

7849. Can you tell the Committee in what way, from your experience, you would propose to increase its efficiency from its present condition?—I am sorry to say that I differ from Colonel Henderson. I think the only way to make the fire brigade of London efficient is to amalgamate it with the police.

7850. That is an opinion which was entertained by Sir Richard Mayne, to which reference has been made?—It was.

7851. What advantages would arise from that, from your own point of view?—The organisation would be more complete; co-operation more perfect; jealousy impossible, and various ill-effects of a divided responsibility avoided.

7852. And if the brigade were so transferred, would you make it a part of the whole force, or would you consider that it ought to be a distinct branch?—It ought to be a distinct branch.

7853. As Colonel Henderson has said?—Yes, a distinct branch of the police.

7854. Supposing that your idea were carried out, you would multiply by that fact very materially the stations which would be fire stations throughout London?—Yes, wherever the Metropolitan Fire Brigade Stations are not contiguous to the police stations, as they are in some places, for instance, in Kennington-lane, where there is one immediately opposite the police station, I would make the police stations fire-brigade stations, or at least have fire engines at these stations.

7855. And connect them by telegraph with the fire-brigade stations?—Every inspector's station is at the present moment connected by wire with the head quarters of the division, and I would connect the head-quarter station of the division with the fire-brigade station of the district.

7856. Then if proper appliances were placed in this way at the disposal of the police, in your opinion fires might be often extinguished at an earlier stage than they are at present?—Many fires when first discovered might be extinguished, or their progress stayed before the arrival of the fire brigade, if proper appliances were placed at the disposal of the police.

7857. I suppose that all this idea is very much connected in your mind with the fact of having a constant supply of water throughout the metropolis?—Yes, certainly.

7858. So that you might get the use of hydrants generally established in London?—I think it would be very desirable to have a special service for fire-brigade purposes always at high pressure, with hydrants fixed at certain intervals in the streets.

7859. Then you indorse the opinion of the late Mr. Easton, who suggested a similar scheme?—I was not aware that that was his opinion.

7860. His suggestion was that a separate main for fire purposes alone should be laid down through London, supplied by reservoirs placed upon certain fixed points, which he named, and that the fire brigade, or whoever had the charge of extinguishing fire, should be able to count upon their own supply of water distinct from that for domestic service?—I quite concur in that opinion.

7861. What appliances would you propose to place at the different police stations?—You would require the means of turning on the water, a branch pipe, a bucket, a small hand-pump, two or more lengths of hose, and perhaps a short folding ladder.

7862. And those might be placed at any of the police stations?—Yes, but I would rather go beyond that; I would like to see a kind of "shelter" or sentry box

box provided at all our fixed points, with the same means placed at the disposal of the police for extinguishing fires.

7863. I suppose it would be perfectly possible to connect that shelter, or whatever it was, at the fixed point telegraphically with your stations?—It might be done with the greatest ease in the world; in fact, you might send any number of messages by the use of four buttons only in the telegraph box.

7864. You would be able in that way to communicate at once with your police stations, and through them to your fire-brigade stations, almost the street in which the fire had broken out?—Yes; each box being numbered, and the number of the box being given, they would know exactly the locality of the fire.

7865. You have now stated that you would increase the number of places by making your fixed points places where those appliances could be stowed away?—Yes.

7866. Do you see any objection to the man on duty at the fixed point, upon the notice of a fire coming to him, going away to take charge of the fire, and leaving his point?—No, I think he would be away a very short time. A fire may be easily extinguished when first discovered, whereas if it gets a head it might require several engines to put it out; the man therefore at the fixed point might take his appliances and remain at the fire until the arrival of assistance from the station, or of the fire brigade.

7867. He would simply go for the purpose of bringing the hose to bear immediately upon the fire, and would hand his hose over as soon as the brigade arrived to the officer in charge, returning to his fixed point?—Or to the reserve of police from the station.

7868. Do you think that you would be in that way able to maintain order, even though detaining the policeman for a few minutes for fire-brigade purposes?—The object of having fixed points is, to render assistance in the event of any serious assault or larceny being committed, in the place of going to the police station, the public have the opportunity of applying to these fixed points, and it is a thousand to one that the services of the man would be required by the public whilst he took the hose to a fire in his immediate neighbourhood.

7869. In fact, you think that the duty, for a few minutes of attending a fire, might very well be added to his other duties as a constable at a fixed point?—That is my opinion.

7870. Would you propose to do anything when he was away to supply his place, in case another fire should occur?—No, not exactly that; but supposing he was called away to any disturbance, he would leave his box locked up, but the constable upon the beat might carry a key by which he could get at the appliances.

7871. And, therefore, if the constable upon the beat, when he came to the stand point, found that the man there had been taken away for any purpose, he would be able himself to use the telegraphic machinery; and supposing the constable to have gone for some other purpose connected with his police duties, and not to have taken the hose with him, the policeman on the beat would then take the hose to the fire?—Yes, that is what I would suggest.

7872. And you think that for the preservation of order you could rely upon the quickness with which, by telegraphic communication, the reserves from the police station could be brought to the fire?—I do.

7873. All this would be supplementary to the fire brigade?—Yes.

7874. But would form a material addition to the usefulness of the brigade, whilst at the same time it would materially quicken the notice which the fire brigade would have of a fire in consequence of telegraphic communication?—It would.

7875. Do you mean to refer in this case only to the area of the Metropolitan Board of Works or to the police area generally?—I think the fire brigade might be extended to the whole of the metropolitan police district. There are many large towns within our police district which are not within the jurisdiction of the Metropolitan Board of Works. For instance, Barnet, Edgware, Croydon, Ilford, Uxbridge, Richmond, Kingston, and many other towns. The police stationed in the exterior district would form a fire brigade for these places with the addition of one or two trained firemen; here the police horses might be made available for drawing the engines.

7876. In all these towns within the police district the police stations would represent fire-brigade stations?—They would.

Captain *Harris.*

17 July 1876.

7877. In that way you would cover a much larger area of ground, and give security to a very much greater amount of property?—We should.

7878. At present you have talked of the appliances for putting out fires, limiting them to hose, buckets, and small hand-pumps; do you see any difficulty in distributing the plant of the existing fire brigade by placing small manual engines at the police stations?—I do not see the slightest difficulty; a manual engine might be run out to a fire by the men in the station who were on reserve. We have always a great number of men in our stations; for instance, the men who are on night duty are in bed till one o'clock in the day; in all probability a number of them would be about the station till it was time for them to go on duty again at night. In our principal stations we have seldom less than 30 or 40 men.

7879. And out of that 30 or 40 men it would be very easy in case a fire arose within a certain distance of your police station for the policemen at the station to run a manual engine out, telegraphing meanwhile for the more powerful engines from the fire-brigade station, so that they would be there within two or three minutes from the time of the fire breaking out?—Just so.

7880. Whereas it must take a much longer time when the stations are so much more distant as they at present are?—Quite so. I propose that all the men should be drilled as firemen, as they are in the dockyards, where they form the most efficient fire brigade that we have.

7881. You think there would be no difficulty in drilling the whole of your force so as to make them capable of taking out a manual engine?—None whatever. I should propose that every member of the force should be carefully trained to the working of the engines, as artillerymen are to the working of their guns. In the Royal Dockyards the men are trained to act in every capacity.

7882. Colonel Henderson stated that the drill of a policeman took about 14 days?—When a policeman first joins he is drilled for about 14 days, and after that he has about 16 hours drill in the course of the year.

7883. Would it make a material addition to that number of days drill if you included the duty of the fire brigade?—I should propose to drill the men to the use of the engines after they had joined their divisions.

7884. In fact you would make every policeman in the force able to take an engine to a fire, and to know the use of an engine just as any other part of his duty?—Yes.

7885. And in that way of course all your reserves would be available for purposes of this kind?—Every man in the police force would be available to act as a fireman.

7886. And without any great addition to the amount of drill you would have to give them?—I think not; our men are very little drilled now. They have only 16 hours' drill in the course of a year, and therefore it would not add very much to their work.

7887. Do you happen to know how many police stations there are within the metropolitan area?—I am not quite sure how many there are within the area of the Metropolitan Board of Works, but they are about a mile and a half apart.

7888. But altogether within the metropolitan police district there are about 152 stations, are there not?—Yes, that would be about the number.

7889. You would multiply the points of call by adding to the existing 50 stations 150 police stations and 245 fixed points?—Yes, or rather 280 fixed points.

7890. Colonel Henderson has given the Committee the number as being 245?—Yes, that was the number; but I think there have been some additions made to the number recently.

7891. You would add to the existing stations over 400 additional stations or points from which calls might be made to fires?—Yes; that is to say, taking the police stations and the fixed points.

7892. Which would naturally enormously increase the facilities for bringing the appliances to bear upon fires?—I think we might do it, and with very little additional expense.

7893. Have you at all calculated what the expense would be of adding to those stations?—No, I have made no calculations upon that point; I think myself that the present fire brigade is very under-manned; I do not think that they are in sufficient strength.

7894. Would

7894. Would you not be able to do away with any necessity for increasing largely the present fire brigade if you added to them the different stations we have suggested?—My impression is that the present fire brigade is very undermanned, and that they ought to have additional strength.

7895. Do you mean that, looking at your own policemen and the duties they have to perform, and then looking at the fire brigade and their duties, the latter are over-worked?—I think, supposing any large number of them are called out to a fire, they have not a sufficient reserve.

7896. That is to say, that supposing one large fire is in progress, and another large fire occurs, difficulties might arise from the brigade being short-handed?—Exactly so.

7897. That would be one of the advantages that you would have of amalgamating with the police, namely, that you would have a very large body of men to fall back upon?—That is true.

7898. In that way, if your suggestions were worked out, of training all your policemen for fire-brigade duty, you would practically have the whole of the metropolitan force of police available for fire purposes?—Yes.

7899. And not only multiplying the points upon which the machinery could be brought to bear, but increasing the strength of your force so as to make it practically impossible that it should ever be short-handed?—Quite so.

7900. Have you any suggestions to make to the Committee with regard to the water supply?—No; I do not know much about the water supply; of course I think it very desirable to have hydrants in all the streets.

7901. Supposing you had hydrants your policemen would be able at once to avail themselves of the water without the aid of the turncock?—Yes; but I should suggest the training of a certain number of men to act as turncocks as they have in Liverpool.

7902. Under a system of constant supply?—If you had a constant service of water, it would be unnecessary then, because any person could turn on the water with hydrants.

7903. But it has been represented to this Committee that, though you have a constant supply, you may not have constant pressure; that is to say, that whilst the domestic supply is being drawn off the mains, the pressure may be so much diminished that you would want a turncock, or somebody who knew as a turncock how to deal with the mains and services so as to concentrate your water upon the main you were wanting to use for fire purposes?—There is no reason why we should not have 500 of the police force trained to act as turncocks scattered all over London; these men might be distinguished by a particular mark or badge; a red facing to the uniform would be a suitable distinction; these men would know every main throughout the whole of their districts, wherever they might be stationed.

7904. Do you mean that they would be separately told off for that duty?—In performing their ordinary duty in the streets, they would be available to act as turncocks.

7905. And that would get over the difficulty which has been suggested, of the possibility of ignorance on the part of the brigade as to the services of the neighbourhood, and how those services could be brought to bear upon any given point?—A map showing the position of the mains on each sub-division, and a register of the plugs, should be kept at each police station.

7906. In fact it would be the duty, of course, if they are connected with the police, of those 500 men, to make themselves thoroughly acquainted with the whole system of their district, so as to enable them to concentrate the water at any given time on any particular spot?—Quite so.

7907. From your having stated that you think we might extend the benefit of this system to the rest of the metropolitan police district, I suppose you do not think that the present fire-brigade district is too large for its purposes?—No; I think their districts are too large. London at present is divided into four districts; I think those districts are far too extensive. My impression is that it ought to be divided at least into eight districts.

7908. Are you speaking of the Metropolitan Board of Works area, or the area that you would suggest?—I would suggest that the metropolitan police area be divided into eight districts.

7909. And you would make in each of those districts the police, or fire-brigade station, as the centre of each of those divisions?—Yes; I have a map

Captain *Harris.*

17 July 1876.

here which I have prepared showing the districts into which I would propose to divide London; this map takes in only the Metropolitan Board of Works area (*producing a map, and explaining the same to the Committee*).

7910. What do the red marks indicate?—The red marks indicate the existing fire-brigade stations, and the blue marks the existing police stations.

7911. You present this map upon your own responsibility as representing your views?—Yes.

7912. And as representing the areas as at present existing, and as you would propose to divide them?—Yes; I have likewise another map showing the Metropolitan Police District, with its present divisions and stations, showing those which have telegraphic communication. (*The same was handed in.*)

7913. By your system, of course, you contemplate connecting all stations which are made for fire purposes by telegraph?—Yes.

7914. Have you thought out your scheme sufficiently to state how you would organise a force of the kind which you have described?—I have to a certain extent. I should recommend a superintendent to each district, whose duty it should be to attend to every fire within his district, and to send for such additional aid as might be required from the adjoining districts. A chief officer to take the management of the whole force, under the orders of the Commissioner of Police. Each station where a steam land-engine is kept to be under the charge of a first-class engineer, made responsible for the state of his engines, and the good order and discipline of his station. Each engine to be under the charge of a first-class fireman, who should have the direction of the branch-pipe of the engine at all fires. The senior firemen to be assisted by four juniors. An engineer and sub-engineer to every steam land-engine; and two boys to every town station for working the electric telegraph calling the men, conveying messages, &c. A horse hose-reel should be provided at all stations where there are steam land-engines.

7915. That is to say, that the telegraph work would then have to be done at the stations?—Yes.

7916. The superintendent would practically, on receiving a call from a standpoint, or otherwise, telegraph to the fire-brigade station where you kept the steam engine of the district, and at once would take the manual from his station to the fire?—Yes.

7917. It would add to the expense if you were to make the service at your fixed point continuous, would it not?—Yes, but it would be a gain to the public in the shape of constant protection as well as protection from fire.

7918. Would you organise your fire force separately for each of your eight districts?—Yes, there would be a certain number of stations in each district.

7919. Is that at all similar to your present police divisions?—They are assimilated in a great measure to the police divisions; two or three police divisions are in one fire-brigade district.

7920. But you would make a separate and distinct history with regard to your metropolitan police force for this purpose?—Yes. (*The Witness handed in a tabulated scheme.*)

7921. This is what you would represent to the Committee as the proposed organisation of the police force for fire-brigade purposes?—Yes.

7922. As forming a part of your police force?—Yes.

7923. In addition to that each police constable would be so trained that he would be enabled to work those engines under the brigade?—Yes, in the same way that our men are trained in the Royal Dockyards to work the engines.

7924. You mean that the constables who are told off for the dockyards are the fire brigade of those dockyards exclusively?—Exclusively. In the Royal Arsenal and in all the Royal Dockyards we have a very efficient fire brigade, composed exclusively of the police of the yard; we find that jealousy exists on the part of the Metropolitan Fire Brigade when their services are required at Woolwich.

7925. That you would mention as a reason why divided responsibility should not exist?—That is so.

7926. You were with Sir Richard Mayne in the police force, were you not?—Yes, for many years.

7927. This subject was mooted at the time of the Committee of 1862, was it not?—It was.

7928. When Sir Richard Mayne expressed that opinion about it?—He did.

7929. You

7929. You have had great experience, have you not, in organising fire brigade systems for some towns upon the Continent?—I was requested by the Italian Minister at this Court to give my opinion with regard to the fire brigade at Turin, and I propounded a scheme which, I believe, gave satisfaction.

7930. Did you suggest, in that case, that the fire brigade should be united with the police?—I can hardly say that, for I do not know what their system of police is. I never was there.

7931. You only know that the scheme which you sent out was adopted?—I was informed that it gave every satisfaction.

7932. Did you suggest something of a similar kind to that which you are now suggesting?—Yes.

7933. What you represent is, that greater security could be given to London under this system which you propose, and that that could be done by availing yourself of the metropolitan police force, at no very great increase of charge?—At no very great additional expense.

7934. The expense being limited very much to the expense of putting up hose, and other things, at the stand-points, and in some cases at the police stations, by the housing of manual engines, and by the addition of telegraphic apparatus?—Yes, I believe there is only one additional fire-brigade station required in addition to the police stations; there is no fire-brigade station near Downham-road, Dalston.

7935. Is there any police station available there?—No, there is no police station nearer than Hoxton.

7936. Is that the only station which you think would have to be created as a separate station for fire-brigade purposes?—That is the only additional fire-brigade station which, in my opinion, would be required.

7937. Therefore with that exception the building would be limited to the housing of hose, manual engines, and different things which would be required?—Yes, we have large yards at some of our stations where you might keep steam fire-engines as well as manual engines, if it were necessary.

7938. With regard to steam fire-engines it would be necessary to have horses; have you the means of housing them?—Yes; for instance, at Kingsland-road we have a large yard where we might erect additional stables; there are now seven or eight stalls there.

7939. However, you do not see any difficulty upon that ground; in fact, supposing the amalgamation to take place, you would have the available stables of the existing brigade?—Yes.

7940. So that whilst keeping the steam fire-engines, which require horse power at the stations where stables exist, you would place at the other police stations the manual engines, and thus scatter them more broadly throughout the town?—Precisely so.

7941. It would require a certain addition to the plant of course, because if you added 150 police stations to the 50 existing fire-brigade stations, besides scattering the overplus of engines at the present stations, you would require some additional engines of course?—Yes.

7942. Therefore the increase of expenditure would come to this, that you would require to accommodate the engines in some cases, and the telegraph apparatus, and a certain amount of additional plant for supplying engine accommodation to 200 and odd stations?—That would be the additional expense.

7943. With regard to the evidence given by a witness from Liverpool, do you think it would be necessary to give a small increase to the pay of those men who were specially set apart for the purpose of the fire brigade according to your scheme?—I should say that the trained turncocks should have 1*s.* a week additional pay.

7944. That would make a sort of merit class to which men in the police force should be promoted, who would go through the amount of drill necessary to qualify them for the post?—Quite so.

7945. Is there any other suggestion that you would wish to make to the Committee?—The only thing that I would suggest is that advantage should be taken of this opportunity to establish some central depôt, which is required for police purposes as well as for fire-brigade purposes.

7946. You mean that if a central station were established, it might be made available for more than fire-brigade purposes, because it would act as a central station for recruiting and drilling for the purpose of the police also?—Yes;

Captain *Harris.*

17 July 1876.

where engines might be built, and the hose for the use of engines constructed. A store of apparatus made on one uniform plan might be kept here, and forwarded thence to any part of the district. This depôt therefore would be available for drilling the recruits to the use of the engine, and instructing them in separating and cleaning the different parts, and acquiring a general knowledge of their business.

7947. One advantage of your scheme would be one central station, and therefore the cost of one would be sufficient for both purposes?—Yes.

7948. And therefore the ratepayers would be, to that extent, benefited?—Yes.

7949. Mr. *Ritchie.*] I take it that whatever may be the ultimate destination of the present fire brigade with reference to its management you are clearly of opinion that the present brigade is entirely inadequate, looking to the size of London, to protect it from fire?—That is my opinion. I do not think it is sufficiently numerous.

7950. Do you think that the small number of men must of necessity entail a great amount of extra labour upon the men?—Yes, I think so; both of labour and confinement. The men must be kept at the station in the event of a call.

7951. Having had a considerable amount of experience in the question of fires, having looked into the matter a good deal, by the statement you have put in, I see that the number of men you think necessary for proper protection, apart altogether from the reserve police you would have if the fire brigade were under the police is 693?—That is inclusive of boys for working the telegraph, conveying messages, calling up the men, and sundry other duties.

7952. But I may take it that, after making a calculation you consider that 693 men and boys is the smallest number of firemen which London should have to provide an efficient fire brigade?—Yes, my idea is that that number is required for fire-brigade purposes alone.

7953. And that in addition to this 693 special firemen and boys which you consider necessary, you would also have in the event of the amalgamation of the police the whole of the police force as a reserve?—Yes, as a reserve, more than 9,000 men.

7954. I think you have already stated that the number of firemen who are known to be at some large fires now, leaves the rest of London in a very unprotected state?—Yes, in the event of a very large fire; for instance, at the Pantechnicon, where there were a large number of steam fire-engines collected, and a number of men present, and where the fire lasted a considerable time; I think if a great fire had broken out at the Docks, for instance, they would have been very much puzzled to deal with it.

7955. You think that when a large fire occurs and leaves only 40 or 60 men spread over all the rest of London to protect all the rest of London, that entails great danger to the metropolis?—I should think it did; happily we have had no large fire such as they had at Chicago and other places, but we might have a stupendous fire.

7956. Do you think that a superannuation fund is a necessary part of any scheme for a fire brigade?—Certainly; the fire brigade ought to be placed on the same footing as our own men.

7957. You think the firemen should at least have the benefit of as large a measure of superannuation as the police?—Yes, according to their length of service.

7958. You think that whatever basis may be fixed upon as the superannuation for the police, that would be a fair basis upon which to found a superannuation for the firemen?—Certainly.

7959. And that any superannuation which was made up simply of the contributions of the men themselves of course would not be acceptable to anybody?—It would not be acceptable to the men nor to the public either.

7960. Supposing it were decided not altogether to amalgamate the fire brigade and the police under one body, do you still think that great advantage would be derived from assistance which might by arrangement be given by the police to the fire brigade?—The police do now assist, but I do not think it desirable to have two distinct bodies.

7961. From your point of view, you think it would be a very desirable thing to have them all under one management?—Quite so.

7962. Of course you know there are objections raised to putting the fire brigade under the metropolitan police, because it is said that there would be taxation without representation; that in point of fact the ratepayers would be contributing the money without any representation?—You might as well say the same with regard to the police force.

7963. You think there would be no more objection in the one case than in the other?—Not the slightest.

7964. But even if it were ultimately decided that the brigade should still remain under the management of the Metropolitan Board of Works, do you think that any little jealousies which might possibly arise, I do not say would arise, ought to prevent some attempt at obtaining that assistance from the police that has been shadowed forth by the honourable Chairman in his examination of Colonel Henderson?—No; our men have very readily assisted the fire brigade upon all occasions; they very materially assist them in removing goods when a warehouse is on fire, or in removing furniture. I have seem men carrying sacks of flour, hay, and every description of things from a place on fire; this occurred recently at a large fire at Paddington; I have likewise seen them bringing a lady near her confinement out of her room at the Great Western Hotel.

7965. So that your experience goes to show that the assistance given now by the police at fires is not restricted to simply keeping back the crowd?—They do everything they can to assist.

7966. They move the hose about?—They are quite ready to do that, and they frequently do it. I am sure if any member of the fire brigade asked a constable to assist in moving the hose he would do it most readily.

7967. Is it not the fact, from your own observation, that whether from the desire of the police to render assistance, or whether from a great many being sent for at the outbreak of a fire, there are a great many more policemen at a fire than are required simply for the purpose of keeping back the crowd?—Yes, generally the police are numerous; whenever I am present at a fire, and I am summoned occasionally, I see that everything is done to maintain good order; but I frequently have to telegraph to the nearest station for more men.

7968. If the first policeman who went down to a fire carried with him either a hand-pump or a ladder, or was able to take a small manual engine with him, in order to get to the work more quickly than a fireman could arrive, it would be of considerable advantage in putting out a fire, would it not?—Certainly, I think many fires when first discovered might be extinguished, or their progress stayed by those means.

7969. If, looking at the increased number of men it would require to make use of those fixed points day and night, it were decided not to make use of them, yet still by making use of the police stations themselves, an enormous increase would be given to the number of points of call?—Yes, a great additional protection would be afforded to the public.

Thursday, 20th July 1876.

MEMBERS PRESENT:

Mr. Clifton.	Sir James Hogg.
Mr. Forsyth.	Mr. Locke.
Mr. Hankey.	Sir Andrew Lusk.
Mr. Hardcastle.	Mr. M'Lagan.
Mr. John Stewart Hardy.	Sir Henry Peek.
Mr. Hayter.	Mr. Ritchie.

SIR HENRY SELWIN-IBBETSON, BART., IN THE CHAIR.

Captain *William Charles Harris*, called in; and further Examined.

Captain *Harris*. 20 July 1876.

7970. Sir *Henry Peek*.] I UNDERSTOOD you on the last occasion to give it as your decided opinion that it would be better in the general interest that the fire brigade should be part and parcel of the police force of the metropolis?—I am of that opinion.

7971. In that case would you have independent fire stations, or should the fire stations always be at police stations?—It would not necessarily follow that all fire-brigade stations should be at police stations. The present fire stations, if the brigade were amalgamated with the police, would remain as they now are, fire-brigade stations, but we should supplement them, in some instances, by our police stations.

7972. I think I understood you to state that in such an event your suggestion would be, to a certain extent, to drill the policemen to fire duties?—Yes, certainly.

7973. Sir *James Hogg*.] You appear to differ very much from Colonel Henderson in your views with reference to the management of the fire brigade?—I am sorry to say I do.

7974. Might I ask do you attend many fires?—I occasionally go to fires.

7975. How often do you think?—I cannot say how often.

7976. Do you go twice a year?—More than that.

7977. Do you think that you go four times a year to a fire?—About four times I should say. I used to go more frequently, but I have reasons now for staying away.

7978. You say that you have paid a great deal of attention to the question of fire extinction?—Yes, I have.

7979. Have you yourself had any practical experience in the question of extinguishing fire?—None.

7980. You have expressed the opinion that the efficiency of the fire brigade would be increased if it were made a branch of the police system; would you kindly mention to the Committee any particular in which there is a want of efficiency in the brigade at present?—I think the fire brigade is efficient, as far as it goes; far more efficient than it was when it was handed over to the Metropolitan Board of Works. It has been very much extended; numerous stations have been added, and I believe an increased staff; still, nevertheless, I am of opinion that the brigade is capable of further improvement.

7981. Is there any want of efficiency in the brigade on the part of the officers or of the men?—None that I am aware of.

7982. Might I ask you whether you consider the fire-engines are of a good character, and of the best description that can be got?—They are, as far as I can judge.

7983. Do you think that the fire-escapes are of a good character, and efficient for their purpose?—Yes, I think so.

7984. Do

7984. Do you think the men who go out with the engines and the fire-escapes do their work in a proper, efficient, and, I might say, a daring manner?—I am quite of that opinion.

7985. In fact, the whole of the men do their work to the utmost of their ability?—There can be no doubt that they do.

7986. While you kindly explain, that being the case, how you would increase the efficiency of the brigade, which you acknowledge do their duty now in a most admirable manner?—I would numerically increase the brigade.

7987. I think the witnesses on behalf of the Metropolitan Board of Works have all allowed that a numerical increase would be advisable?—Very probably.

7988. You allow that the fire brigade are efficient, and that they only want a little increase; therefore, if they had a little increase in their number that would meet all the requirements of the case, would it not?—I do not think it would. I would supplement the fire brigade by the increase of nearly 10,000 men of the metropolitan police.

7989. You allow that the brigade are thoroughly efficient as regards stations, men, and engines?—As far as they go.

7990. All you say is that they are not quite strong enough at present?—They are not strong enough, and they require a different organisation.

7991. One of your reasons for thinking that the police and the fire brigade should be under one management, I understand to be that jealousy between the two would be impossible. Will you tell me if there is any jealousy between the fire brigade and the police at present?—I think so. It is reported to me that when the fire brigade go to Woolwich considerable jealousy exists between the Royal Arsenal Fire Brigade and that of the metropolis. The chief officer of the Metropolitan Fire Brigade appears to be under the impression that Clause 12, 28 & 29 Vict. c. 90, is compulsory, whereas it is only permissive. The clause states: "On the occasion of a fire the chief or other officer in charge of the fire brigade may, in his discretion, take the command of any volunteer fire brigade or other persons who voluntarily place their services at his disposal." Now, I contend that the Royal Arsenal Fire Brigade is not a volunteer brigade, but one belonging to the Government, and with which the chief officer of the Metropolitan Fire Brigade has no right to interfere. Now I will point out the manner in which the Royal Arsenal Brigade are treated. On the 30th March 1873 the superintendent of the Woolwich Dockyard division attended a fire at the York Beerhouse, New-road, Woolwich, with the men of his division off duty. The fire having occurred near the Arsenal, the police were the first there, and at once came into action. When the Metropolitan Fire Brigade arrived an engineer seized the branch pipe held by police fireman Smith, and attempted to take it from him. Smith appealed to his superintendent, who told the engineer to find his own fire gear. When the fire was over the impression remained on the mind of the superintendent that some of his men, and Smith in particular, had received an unnecessary ducking. On the 16th April 1872 the superintendent of the Woolwich Dockyard division was present with his brigade at a fire at No. 14, Plumstead-road, and gave directions for hose to be attached to the Arsenal hydrants and passed over the boundary wall. Police fireman Smith immediately got his branch pipe to bear on the fire. Soon afterwards the Metropolitan Fire Brigade arrived, when the engineer in charge again seized Smith's branch pipe. The constable was indisposed to part with it, but to prevent any unseemly tussel during the few precious moments whilst the fire was at its height, he was told to give it up to the brigade and get another into play for himself. The lives of three children were lost at this fire. Again, on the 26th December 1875, the Royal Arsenal Fire Brigade attended a fire at 35, High-street, Woolwich, and got into play from a stand-pipe; they were, however, shortly afterwards requested by the Metropolitan Fire Brigade to "turn off," as they were in the way. Serjeant Laughlin asked the leading fireman whether he took the responsibility of ordering him to turn off the water; he replied that he did, as he was the fireman in charge. On the 3rd May last a fire took place on the premises of Messrs. Elkin, Fletcher & Lee, coal merchants, Trinity Wharf, Woolwich. The Arsenal Fire Brigade attended, and were the means of saving one of the insurance offices a large sum of money, as by their exertions a building containing 300 tons of coals was saved from destruction, and only a comparatively small loss occurred. The superintendent of the Royal Arsenal police, with his men, were,

Captain *Harris.*

20 July 1876.

as usual, the first at the fire, and connecting 14 40-feet lengths of hose, commenced to play, the water being obtained from a hydrant in the dockyard (with a pressure of 90 lbs. to the square inch) brought through the west gate and on to the roof of the shed. Several Metropolitan Fire Brigade engines arrived, but were powerless, owing to their inability to obtain water from the street mains. At this fire three firemen of the Metropolitan Brigade asked Serjeant Wells, of the dockyard police, to play upon a particular spot; he being tired with holding the branch pipe, remarked that one of them could take it. One of them then took hold of the pipe, but not being accustomed to such a pressure of water was unable to hold it, and got knocked over into the coals. The police then recovered and took possession of it, and extinguished the fire.

7992. Has that ever been represented?—It has been represented to me.

7993. Has it ever been represented to the Metropolitan Board of Works?—I am not aware that it has.

7994. You will believe me when I say that I have never heard of any jealousy in my life between the police and the fire brigade?—I think that a good feeling exists between the officers, but the men evidently feel that they do not belong to the same service.

7995. That has nothing to do with jealousy?—I think it has.

7996. You say there is jealousy at Woolwich; will you kindly tell me any other part of London where there is jealousy?—There is no other part of London where there is a fire brigade unconnected with the Metropolitan Board of Works.

7997. So that your remarks with reference to jealousy refer to only one single part of London, namely, to Woolwich?—Yes, because in that one district only there exists a fire brigade unconnected with that under the Metropolitan Board of Works.

7998. Did I understand you to state that a separate system of water mains should be laid down for fire purposes, and that hydrants should be laid on to them?—I think so; but I did not go into the question of expense; I only considered the increased efficiency of the fire brigade.

7999. Are all the suggestions which you have made utterly regardless of expense?—I have not said so.

8000. You said that you did not regard the expense?—I referred to the case you mentioned.

8001. Have you ever considered what the expense would be?—No, I have not.

8002. Then you must have considered the matter utterly regardless of expense if you have not considered what the expense would be?—I did not go into the question of expense,

8003. Have you heard the engineering evidence given to this Committee pointing out the objections to affixing hydrants to mains under the present system of water supply?—I have not; I was not present when Mr. Bramwell gave his evidence.

8004. With reference to utilising what are called the police fixed points for fire purposes, I suppose those fixed points are to enable any one who wants a constable to know where to find him?—Yes.

8005. If a constable were taken away, what would a person do who wanted to find him?—I think I explained that during the short time the constable would be absent from his fixed point, the public would not suffer to any appreciable extent.

8006. Are you not rather assuming that the constable would be only a short time away?—No, I think not; because his duty would cease as soon as the reserve arrived from the station, or the fire brigade from the district station.

8007. How long do you think that would be?—It depends upon the distance they would have to come.

8008. You are aware that the operations of the fire brigade at present are confined to the Metropolitan Board of Works area; and what I understand you to say is, that you would extend their operations to the whole police area?—Yes.

8009. Would that not involve the establishment of more fire-brigade stations and more engines?—I think not; I think our police stations in the rural districts would be available as fire-brigade stations.

8010. You would not add any?—I would not add one.

8011. Outside

8011. Outside the area of the Metropolitan Board of Works would you let the police do the fire-brigade work or would you add firemen?—The police stationed in the exterior district would form a fire brigade for such places as Barnet or Edgeware, with the addition of one or two trained firemen.

8012. Would you put those firemen at the police stations?—I would place them in all probability at the police stations.

8013. Is it your idea that you would have all the men of the police force instructed in the use of the fire-escapes?—No; I think the fire-escapes should be under the fire-brigade branch of the police.

8014. Your idea as I gather is, that the police would not in any way serve to use those fire-escapes?—The police very frequently save life from fire without the use of an escape.

8015. They rush in of course?—Yes, and bring ladders from adjoining premises. Only last month a constable brought a woman and her three daughters in his arms down a ladder, and by throwing a rope to some men who were in the house which they secured, three other lives were saved.

8016. But that is a very different thing from going upon an escape, is it not?—It is very much more difficult to go up a ladder than it is to go up an escape.

8017. Have you ever tried it, with the view of seeing which was the more difficult?—I cannot say that I have.

8018. You stated that only 12 days' drill were sufficient to make a police constable efficient?—Yes, to give him a knowledge of moving together in a body, but it takes three years to make an efficient police constable.

8019. Do you know how long it takes to make a fireman efficient to start with?—I daresay to make an efficient fireman, it would take as long a period perhaps as it would take to make an efficient police constable.

8020. Perhaps you will believe me when I say that it takes two or three months?—It takes two or three years to make an efficient police constable.

8021. Upon that principle it would take six years to make an efficient police constable a fireman?—I do not think so. I think the duties of the police require to be performed by men of greater intelligence than those of firemen.

8022. As regards the water, you stated that you had not considered the cost of laying on a constant supply with hydrants, but with regard to the expense of carrying out your other plans, the drilling of the police for example, have you considered the cost of that at all?—No, I stated that I had gone into no calculations with regard to expense, but no additional expense would be incurred by drilling the police to act as firemen.

8023. Then you say you would have 500 constables trained as turncocks, and would pay them 2 *s.* a week extra?—I have corrected my answer by saying that I would give them 1 *s.* a week extra.

8024. That would cost 1,300 *l.* a year extra to the force?—Probably.

8025. You stated as one of your suggestions that there should be eight fire-brigade districts instead of four; do not you think that that would add considerably to the expense of the fire brigade?—It would add the expense of four additional superintendents.

8026. What would you do with the City of London, supposing your scheme were adopted of amalgamating the police and the fire brigade?—I think that might be arranged.

8027. Will you tell me how you think that could be arranged?—There would be no difficulty with Colonel Fraser in coming to an arrangement.

8028. Would you have the police who are outside the City take the whole of the superintendence within the City?—No; we should not interfere with the City.

8029. Would you have two different brigades; two different amalgamations?—I do not think it would be necessary to have two different amalgamations; the area of the City is very small.

8030. The City police force is under the Corporation of London, and the chief officer is Colonel Fraser?—That is true.

8031. May I ask under whose control and management would you place the fire brigade in the City?—I should place it, as I suggest, under the control of the metropolitan police.

Captain *Harris.*

20 July 1876.

8032. Do you think that the Corporation of London would like to see an officer of the metropolitan police having any control or authority within the City?—I cannot answer that question.

8033. Do not you think that there would be a divided authority if there were to be two boards?—I do not think there would be any divided authority. Supposing, for instance, that the City police merely kept the ground as we do at the present moment, the brigade would operate as they now do.

8034. You would send the police outside the City into the City, to work there?—I do not say that I should; it would be unnecessary.

8035. Have you ever thought the matter over?—I have never considered the subject with regard to the City, but I have no doubt that the matter could be easily arranged.

8036. I think, when you were asked with reference to the fire at the Pantechnicon, that you adverted to the danger that there would have been, when such a large part of the brigade was at work at the Pantechnicon fire, if another fire had broken out; I believe, as a matter of fact, that another fire did break out at that time, and was coped with successfully; are you aware of that?—No, I am not.

8037. The police, as you have stated, help the brigade very materially; but supposing that they could assist with manual engines, and so on, do you see any reason why that help could not be given, even though they remained separate bodies?—I think the men would act more in unison if they all belonged to the same force.

8038. You say you have seen the constables move the hose and carry things out of buildings on fire, and that they keep order and enable the firemen to carry on their operations; does not this show that the two forces work well together, although they are under different authorities?—Yes, they may work well together, but I think they would work better together if they were under the same head.

8039. Do not you think that, without altering the management of the two bodies, it would be sufficient if the police at their stations and at the fixed points were furnished with hose reels and hand-pumps to take to fires, and if their stations were connected also by telegraph with the fire-brigade stations?—If the stations and fixed points were connected by wire with the fire-brigade stations, no doubt that would add much to the efficiency of the brigade; but still, nevertheless, I am of opinion that the men would co-operate better if they belonged to a united service.

8040. Can you give the Committee any instance where the men of the two forces have not co-operated besides the case of Woolwich which you have mentioned?—I do not wish to name any particular instance, but I know what the feeling of the men is on the subject.

8041. It is a general idea of yours?—It is not my idea alone, it is the feeling of others.

8042. I understood you to state that you thought some large fires might have been avoided if the police and the fire brigade had been united together; will you explain that suggestion?—In this way: that having a larger number of stations, and a greater number of men, you would have increased means for putting out fires, and these means would have been more readily at hand.

8043. Could you name any fire at which you think this would have been the case?—I do not wish to specify any particular case.

8044. You say, in answer to Question 7878, that you have a great number of men in all your stations who will be always ready to run an engine out at any time; that seems very different from what Colonel Henderson said in answer to Question 7769, which was, that there are a very small number of reserves at the stations, they being required to take the place of those on leave or sick; could you give me your account of the difference between those two statements?—What Colonel Henderson alluded to no doubt was this, that we have in every division a certain number of men who are called the "Reserve." You may see upon the men's collars A R and B R, and so on; these are called the reserves of the division. These men fill up the places of those on leave, or sick, or who are engaged upon special duties, whereas the reserve to which I alluded are the men off duty in the stations.

8045. Have

8045. Have you ever thought of this: supposing it were arranged that the fire-escape men at different points were to remain at those points all day, that would meet the case of the suggested adaptation of the police fixed points, and be very useful indeed in the event of an outbreak of fire?—I have no doubt that it would, to a small extent, increase the efficiency of the brigade if you added so far to their number as to keep a fire-escape man on duty during the day as well as during the night, but these men would be totally unfit for police duties. Very few fires, comparatively speaking, occur during the day; I think, therefore, that it would be a waste of strength to have men at fire-escape stations during that period.

8046. One part of your evidence is not quite clear to me. You stated in answer to Question 7929, that you had propounded a fire-extinguishing scheme for Turin, which was somewhat similar to that which you are proposing for London, but that you are not acquainted with the police system at Turin. I would like to ask how, if you are not acquainted with the police system of Turin, you could propound a scheme suitable for them which was based upon the police system of the metropolis?—The Italian Minister at this Court asked me to propound a scheme for a fire brigade at Turin. That I did to the best of my ability, and that I gave to him with a map; it was merely my suggestions with regard to the organisation of a fire brigade for that city, and had nothing whatever to do with the police.

8047. It was a plan for the organisation of a fire brigade, similar to that which exists in London?—Yes.

8048. Without any regard to the police at all?—Yes.

8049. Mr. *Hankey*.] I think you stated that whenever the duty of making provision against fire was left to the sole discretion of the Government, as at Woolwich, the whole of the arrangements were placed under the police?—Yes, the police form the fire brigade. Our men are on duty in the Arsenal as in all the Royal Dockyards, and form exclusively the fire brigade.

8050. I understood you to express an opinion that the whole of the fire protection arrangements of the metropolis should be placed upon the same footing as at Woolwich?—Yes, I think so.

8051. With reference to the question of expense, are the Committee to understand that, without entering into any detail, you have satisfied yourself that by a complete amalgamation of the fire brigade with the police, efficiency and economy would in a general sense be promoted?—I am of that opinion.

8052. I understood you to say that that amalgamation would have this very strong recommendation, that in the event of a number of serions fires occurring at the same time in London, the whole of the police force of London would be more readily available for this duty than is at present the case?—That is so.

8053. With regard to the City of London, do you find that the separation between the police of the City and of the rest of the metropolis creates any want of harmony between the police of the City and the rest of London?—None whatever; the very best feeling exists between the City police and the metropolitan police.

8054. You say the Metropolitan Board of Works have no exclusive privileges connected with the City; you do not apprehend that there would be any more difficulties when they are amalgamated with the police than there are at present?—I do not.

8055. You are aware that there is at present a divided authority by the Metropolitan Board of Works having no direct authority in the City of London?—I am not aware whether they have any direct authority in the City of London or not.

8056. Mr. *Hayter*.] Could you give the Committee generally the difference between the area of the metropolitan police district and the area over which the fire brigade operates?—I am afraid I cannot give the difference in acres or square miles. I have it marked upon the map which I handed in to the Committee, which shows the district within the jurisdiction of the Metropolitan Board of Works and the Metropolitan police district. This district comprises the parishes which are wholly situate within 15 miles of Charing Cross (with the exception of the City of London). The area of duty of the Metropolitan police also includes the River Thames, the Royal dock, and other yards and arsenals, and also, as required, in the Royal palaces. The *power* to act as distinguished

Captain *Harris.*

20 July 1876.

from *duty*, includes the whole of the counties of Middlesex, Surrey, Hertford, Essex, Kent, Berkshire and Buckinghamshire.

8057. With regard to drilling the firemen and the policemen, the question I wished to ask is this: Practically, both the fire brigade and the police recruit from the uneducated class, and they are trained without difficulty to their respective duties, as far as you know?—Yes, comparatively from an uneducated class.

8058. If the fire brigade were amalgamated with the police, a certain number would, I presume, be recruited from the sea service as easily as they are at present?—We take seamen at the present moment as well as soldiers, provided they are fit and men of good character.

8059. There would be no practical difficulty in making a selection for your firemen from the class best suited for the purpose?—Not the slightest.

8060. The Committee have had evidence to say that sailors are peculiarly fitted for this service, and you say that some sailors are in the police now; I presume you would go on recruiting sailors more extensively if you undertook the fire-brigade duty?—Probably we should; sailors are more adapted for the duty, because they are accustomed to go aloft.

8061. Certain orders are read to the police before they go on their beats, are they not?—Yes; the orders of the day which have been issued during the last 24 hours.

8062. Do those orders include directions with regard to how the police are to act in case of a fire breaking out?—There are standing orders upon that subject, which every man has in his possession.

8063. When a fire breaks out, particularly in a mews, a policeman has several duties to perform at once?—Yes; he has to arouse the inmates of the house, to send for the fire-engines, to give notice to the turncock, and at the nearest police station. When the police from the station arrive their duty is to keep a clear space for the action of the fire brigade, to save lives and assist in the removal and protection of property. In a large city a fire always attracts a great crowd, and the energies of the police are at time sorely taxed to protect property from depredation, and to keep curious bystanders out of danger; likewise to regulate and divert the traffic, and keep a sufficient space for the firemen to work.

8064. It is important, therefore, to have the turncock's address known to all the neighbourhood by placarding it, as they do at the West End now?—Yes, and we have it in all our stations likewise.

8065. The policeman has so many things to do when a fire breaks out, that he must get the assistance of bystanders as much as possible?—Yes, in sending for additional aid.

8066. But beyond that the police do not interfere at present, further than that they are upon the same ground?—No; as soon as the fire brigade arrive the police fall back to their normal duties of preserving order, and keeping the crowd out of harm's way.

8067. Would there, as matters at present stand, be any clashing of authority between Captain Shaw, as the head of the fire brigade, and the chief of the police?—I think not. The chief officer of the fire brigade would then take his orders from the Commissioner of Police, and we should be spared those unseemly scares or false alarms of fire, such as that which occurred at the British Museum, which frightened the whole of London from its propriety, caused an enormous crowd to assemble, and great additional trouble to the police.

8068. There has been no clashing of authority, but there might be?—Not that I am aware of, but a good deal of feeling might arise at very short notice.

8069. I presume your idea of the desirability of union between the two forces is founded on the belief which you hold, that there would be greater unanimity and cordiality between them?—Quite so.

8070. That is a very essential point, in your opinion?—It is undoubtedly.

8071. Mr. *Forsyth.*] Assuming that there were an amalgamation between the police force and the fire brigade as now existing, the whole of the cost now incurred by the brigade would become part of the cost of the police force, would it not?—That entirely depends on circumstances. The fire brigade could not without an Act of Parliament, I presume, be made a branch of police; and whether Parliament would give us power to raise an additional rate of say a halfpenny or a penny in the pound, whatever it would come to, would be a matter for the consideration of Parliament alone.

8072. But

8072. But the Metropolitan Board of Works are a representative body elected by the ratepayers, and the ratepayers by that means you may say have a control over the expenditure of the money, whereas they have no such control over the police?—No.

8073. If the whole of the police and the fire brigade were amalgamated, the cost of the police, then including the fire brigade, would be very much increased?—It might amount to a penny in the pound.

8074. And there would be no control by the ratepayers over it?—No.

8075. Does not it occur to you that there would be a strong objection on the part of the ratepayers of the metropolis if the control of the fire brigade were transferred to the police force, and they had no control over the expenditure?—I think not.

8076. Sir *Andrew Lusk.*] How would you get on with the City of London police; would you have two controlling authorities in the fire brigade, Colonel Fraser in the City, and Colonel Henderson in the Metropolitan area?—The area of the City is very small, about a mile and a quarter; supposing the City police did not in any way act as a fire brigade, but merely kept the ground as they do now, the only difference would be that we should lose the services of the City police as firemen within the City.

8077. It has been stated that there is an enormous amount of property in the City which especially ought to be protected from fire?—There is no doubt the value of property in the City is enormous; this ought to be protected from fire.

8078. What I want to know is how you would get the two heads to work together?—I do not think there would be the slightest difficulty in acting with the City police; we are united in many things; our orphanage one, and that creates a great deal of good feeling between the Metropolitan and the City police.

8079. But the police are under two heads, and I want to know how you could work them together in this respect?—I do not see any difficulty.

8080. But you will admit that it is a dangerous thing to bring two large bodies into collision with each other?—They are not likely to come into collision.

8081. *Chairman.*] I imagine the position of things would be this: At the present moment the Metropolitan Board of Works who, although they have a rating power, are not the City authority, have the control of the fire brigade, and that fire brigade works under the management of the Metropolitan Board of Works in the City of London?—It does.

8082. And no difficulty has been found in so working it?—I believe not.

8083. Supposing your idea to be adopted of the Metropolitan Board of Works ceasing to be the authority over the fire brigade, which is a distinct branch now, and would be a distinct branch under your suggested plan of the police then, there would naturally be no greater difficulty in working any portion of your fire-brigade police in the City than there is at present in another authority, the Metropolitan Board of Works doing so?—I do not think there would.

8084. And the body attached to the police would work in the City in the same way as the body attached to the Metropolitan Board of Works does now?—Yes.

8085. Mr. *Hayter.*] The fire brigade would be a department like the detective department is now?—Yes, and carried out under the superintendence of the police just as the Common Lodging Houses Act, the Smoke Nuisance Act, the Public Carriage Act, or the Contagious Diseases Act, is worked now by the police.

8086. Sir *Andrew Lusk.*] But your men cannot come into our authority without being allowed to do so?—Their services are very frequently asked for, and not always acknowledged.

8087. *Chairman.*] But supposing your fire brigade, if attached to the police, went into the City, they would not go as police; they would go as the fire brigade, and there could be no more conflict of authority than there is now?—There could be no conflict of authority.

8088. Mr. *Ritchie.*] I suppose you would contemplate that, if the police were required within the City to supplement the action of the fire brigade, those police should be the City police?—Yes, but I do not think, in all probability, that they would be required.

Captain *Eyre Massey Shaw*, re-called; and further Examined.

Captain *E. M. Shaw.*

20 July 1876.

8089. *Chairman.*] I UNDERSTAND that you wish to call the attention of the Committee to certain evidence that was given before this Committee which you believe affects the position and the history of the men under your command belonging to the fire brigade?—I do.

8090. The Committee, I think, would wish not to go into any general evidence, but that you should confine yourself to calling their attention to the points upon which those statements are made, giving the Committee your opinion, and that of your men, upon those statements?—I will confine myself to a very few points. In the first instance, I may say that we are prepared to rebut all the evidence which Mr. Swanton has given on the subject of the floats. That would relate to the Questions from 7054 downwards. For example, in reply to Question 7070, he says: "I see no reason why the same amount of money which has been spent in four floats, which have proved again and again, I was going to say, almost worthless, should not provide eight thoroughly efficient vessels." Mr. Swanton should have informed this Committee that the Metropolitan Board of Works have not purchased four floats. They have purchased two floats, one large and one small, which of course makes a very great difference in the mode in which his answer should be received here.

8091. The other floats which the brigade at present possess were handed over to them at the time of taking over the brigade?—Yes, they were taken over with the brigade. Then with regard to the fire at the Pantechnicon, at Question 7117, the evidence which I should give to rebut his statements would be rather voluminous, but I wish to point out that the witness was asked, "Were you present when that engine got there? *A.* I was busy inside the building, and I did not see when it got to work; but I know that the brigade engine from Pimlico came up almost as soon as that engine did, and it got its hose out, and as the plug was required for one engine the private engine was moved out of the way to make room for the public engine." All that is wrong in point of time. Mr. Swanton travelled many miles to reach the fire. He states that he was busy in the building at the time alluded to. A volunteer fire-engine was upon the spot for half-an hour before our first brigade engine arrived. That would not be at all understood from the answer which he gave. Then in reply to Question 7138, he talks about manual engines being all small manual engines, and having at some stations a steam engine for horses and no other engine at the place. That would be a very bad mode of arranging engines for the service of London. In my opinion no station should, under any circumstances, be without a manual engine, whatever steam engines there might be in that station.

8092. What you would represent to the Committee is, that however many stations you were prepared to create in London, you should have a manual engine at each of those stations, even although you should at some of the stations place steam engines also?—Yes; the idea of placing a steam engine alone at any station is a wrong idea. They should not be put into places by themselves.

8093. I suppose you would represent that to the Committee upon the ground that every station has a district about it which is nearer to that particular station, and to which a manual engine could often go more quickly than a steam engine could be taken there?—If a fire occurs in the immediate neighbourhood of the station the manual is the proper thing to use and the steam engine is not the proper thing to use. Then, at Question 7142, Mr. Swanton is asked whether it requires three men for two fire-escapes, and he says: "If I am to found my opinion upon the old way of doing things, they had never formerly more than one man to manage one escape." That is all wrong; of course, they had supernumeraries also. Then, in reply to Question 7145, which is the most important of all concerning the work of the men, Mr. Swanton points out that our men are in the same position as his; that his men get eight hours work, eight hours sleep, and eight hours smoking their pipes, and so on. I wish to say, with regard to that, that Mr. Swanton knows nothing at all of the details of the brigade, and I consider it grossly unjust to our men to make such a statement as that, because Mr. Swanton has the power of getting correct information. Even in reply to the previous question, namely, 7144, he acknowledges that there ought to be more men; but if we have only eight hours work in 24 hours

we

we certainly should not ask for more men; therefore the replies to these two questions practically contradict each other.

8094. Mr. *Ritchie.*] How many hours work have your men lately had?—It is almost impossible to say, but I should say not less than 20 hours out of 24, taking it all round. For the last 30 or 40 days we have been very heavily worked; and for the last three or four days the work has been exceptionally heavy. Then in answer to the same question with regard to the Salvage Corps, he says they have 64 men and only four stations, and yet he compares their labour to ours, which I consider to be extremely erroneous. The duties of the men I consider have been very fairly represented to this Committee by the men who have been examined. They have been represented with that moderation which we were desirous to observe before the Committee; and I may add that I have received a letter from some of our men this morning (who have had a little meeting about it to-day), speaking about this very evidence to which I am now giving a reply, in which they conclude by saying, "We respectfully protest against this person urging opinions against facts." Then with regard to Question 7146, describing the duties of the men, Mr. Swanton concludes his answer by saying, "I have gone through it myself, and therefore I can speak of it." Now, I wish to deny that. He was in the brigade formerly, but he was not in the brigade as it exists now under the Metropolitan Board of Works, and he cannot know the duties of his own knowledge.

8095. He simply said this, referring to the time when he was a member of the brigade, which, as I understand you, gives an erroneous idea of the duties of the brigade as they are now?—When he talks about the men's duties consisting of reading newspapers and smoking their pipes for that portion of the time, he says he knows that as a fact, having gone through it himself, whereas he certainly has not gone through it as it is now. Then with regard to Questions 7213, 7214, and 7215, Mr. Swanton is asked about the difference between merchant seamen and Royal Navy seamen. I wish to observe that he has been 28 years out of the navy, and that I have never employed him for training men; that he really does not understand that point, and ought to have said so. I think his answer ought to have been given in the sense of not having been employed in that branch.

8096. Mr. Swanton's answer is given as relating to the Salvage Corps, for he says, "for our purpose"?—It is the opinion of a man who professes to be a practical man. Then in answer to Question 7218, where Mr. Swanton says that he was transferred to the Metropolitan Board of Works for six months, I wish to say that we joined the Metropolitan Board of Works upon the 1st of January 1866, and that Mr. Swanton took his discharge from them on the 12th of February, so that he served only one month and 12 days. I think that is rather important. Then with regard to Questions 7201 and 7202, relating to the number of men at the stations, Mr. Swanton says that six or eight men would be sufficient for a head-quarters station, and yet in reply to another question, namely, 7311, he says that there should be five or six or more men for the smaller stations.

8097. Mr. Swanton is speaking in his evidence all through with regard to his proposal, which was that they should scatter more widely the engines, and leave only one engine at each station; the number of men he suggests, I suppose, would be pretty nearly the same, under those circumstances, for all stations?—But Mr. Swanton only allows six or eight men for a head-quarters station. What I wish to say in connection with that is, that in the old times, when the brigade was a private concern, and on a very small scale, there were always from 14 to 20 men in the Watling-street station, and that six of them used to be officers. There used to be two superintendents, two engineers, and two sub-engineers in those days, and now that we are a public institution, with many increased duties and responsibilities, we have only 16 men.

8098. Upon these points which you have mentioned, you would wish to be heard when the Committee meet again?—I should.

LIST OF APPENDIX.

Appendix, No. 1.

PAGE

Map of London, setting out the different Stations of the Fire Brigade, the Stations of the Fire Escapes, the Police Stations, and the Boundaries of the several Water Companies - *facing* p. 601

Appendix, No. 2.

Papers put in by Captain Shaw:

Reports of Captain Shaw to the Metropolitan Board of Works - - - - - 602

Appendix, No. 3.

Metropolitan Board of Works.—Return showing the Cases of Men who have broken down in the Service of the Metropolitan Fire Brigade, with the Amount awarded them by the Metropolitan Board of Works; also, a Return of the Men who have displayed great Merit in Saving Life from Fire, and whose Cases have been specially laid before the Metropolitan Board by the Chief Officer, and of the Gratuities granted to them by the Board:

1.—Cases of Men who have broken down in the Service of the Metropolitan Fire Brigade, with the Amounts awarded to them by the Metropolitan Board of Works - 629

Deaths - - - - - - - - - - - - - - - - 629

Discharged on account of Infirmity - - - - - - - - - - 630

2.—Return of Men who have displayed great Merit in Saving Life from Fire, and whose Cases have been specially laid before the Metropolitan Board by the Chief Officer, and of the Gratuities granted to them by the Board - - - - - 631

Appendix, No. 4.

Paper handed in by Captain Shaw:

Metropolitan Fire Brigade.—Summary of the Number of Fires in each Hour for Ten Years - - - - - - - - - - - - - - - 633

Appendix, No. 5.

Paper handed in by Mr. Godfrey Lushington:

Extract from General Police Orders relating to Fires - - - - - - 634

Appendix, No. 6.

Paper handed in by the Chairman:

Table showing the Rates of Pay and Scale of Pensions authorised for the Metropolitan Police - - - - - - - - - - - - - - - 636

Appendix, No. 7.

Papers handed in by Captain Shaw:

Metropolitan Fire Brigade:

Monthly Summary of Fires for Ten Years - - - - - - - - - 637

Daily Summary of Fires for Ten Years - - - - - - - - - 637

Weekly Summary of Fires for Ten Years - - - - - - - - - 638

Appendix, No. 8.

Paper handed in by Captain Shaw:

Metropolitan Fire Brigade.– Table showing the Number of Fire Engine Stations, Men, Fire Escapes, and Fire Escape Stations, on the 1st January in each Year, from 1866 to 1876 - - - - - - - - - - - - - - - - - 639

Appendix, No. 9.

Papers handed in by Mr. De la Hooke:

Report of Captain Shaw, dated 16 December 1871 - - - - - - - - 640

Metropolitan Board of Works.—Memorial of the Officers and Men of the Metropolitan Fire Brigade, praying the Board to adopt a Scale of Pensions for the Brigade - 641

Metropolitan Board of Works.—Report of the Works and General Purposes Committee of the 21st February 1876, upon the question of the use of Hydrants for extinguishing Fires, and Draft of proposed Reply to the Letter of the East London Waterworks Company of the 14th January 1875 - - - - - - - - - - - 642

Appendix, No. 10.

Paper handed in by Mr. De la Hooke: PAGE

Extracts from Fire Brigade Committee Minutes - - - - - - - - 646

Appendix, No. 11.

Paper handed in by Mr. De la Hooke:

Report of Sir J. W. Bazalgette, 1st February 1876 - - - - - - - - 654

Tabular Statement referred to in the Report of Sir J. W. Bazalgette, dated 1st February 1876 - - - - - - - - - - - - - - - - - 655

Water Pressures as ascertained by Gaugings taken in various Parts of the Districts of the several Metropolitan Water Companies, arranged with reference to the Altitudes of the several Places above Ordnance Datum - - - - - - 655

Metropolitan Board of Works.—Report by the Accountant on a Superannuation Fund for the Fire Brigade - - - - - - - - - - - - - - 657

Appendix, No. 12.

Papers handed in by Mr. Richardson, 15 June 1876:

Table showing the Proportion of Pay which a Member of the Fire Brigade would Receive as Pension, if incapacitated after various Terms of Service under the Three Schemes mentioned, viz.: Board's Scheme, Police Scheme, and Men's Scheme - - 661

Length of Service of Men leaving the Brigade - - - - - - - - - 661

Appendix, No. 13.

Papers handed in by Mr. Richardson, 19 June 1876:

No. 1.—Fire Brigade Superannuation.—Statement showing the Amount contributed by the First and Last Man in each Class, and the Annuities they would be entitled to under Board's Scheme, if it had been accepted - - - - - - - - - 662

No. 2.—Metropolitan Board of Works.—Memorandum by the Superintending Architect, as to the Means of providing Fire-Plugs in the Metropolis, with further Suggestions by Captain Shaw, Chief Officer of the Metropolitan Fire Brigade, and Correspondence with Water Companies (with Diagrams) - - - - - - - - 663

Appendix, No. 14.

Paper handed in by Mr. Richardson:

Metropolitan Board of Works.—Fire Hydrants.—Report made to the Works and General Purposes Committee by the Chairman of the Board and the Deputy Chairman of the Committee, on the subject of Hydrants for extinguishing Fires - - - 673

Appendix, No. 15.

Paper handed in by Mr. Thompson, 26 June 1876:

Return relating to Contributions from Insurance Offices upon the Rateable Value of the Metropolis - - - - - - - - - - - - - - - - - 675

Appendix, No. 16.

Papers handed in by Mr. A. Gunn, 26 June 1876:

Metropolitan Fire Brigade:

Working Account - - - - - - - - - - - - - - - - 676

Receipts and Payments from 1866 to 1875 - - - - - - - 676

Estimate of Amounts required for Working Expenses of the Fire Brigade for the Year 1876 - - - - - - - - - - - - - - 676

Capital Account.—Loans Raised and Amounts Expended, 1866 to 1875 - - 677

Return showing Amount of first Cost of Stations, from 1st January 1866 to 31st December 1875 - - - - - - - - - - - - - - 677

Return of Fire Brigade Stations in use on the 31st December 1875, showing Rental, &c., Cost of Erection, and Amount expended in Alterations and Repairs - - - - - - - - - - - - - - - - 678

Appendix, No. 17.

Drawings of Hydrants - - - - - - - - - - - - - - - *facing* p. 679

Appendix, No. 18.

Papers handed in by Mr. G. W. Lovell, 10 July 1876: PAGE

No. 1.--Letter from Mr. G. W. Lovell to the Chairman of the Metropolitan Board of Works, dated 23rd November 1871, with Enclosure - - - - - - - - 680

No. 2.--Letter from Mr. John Pollard to Mr. G. W. Lovell, dated 23rd December 1871 - - - - - - - - - - - - - - - - - 681

Appendix, No. 19.

Paper handed in by Mr. Tozer, 10 July 1876:

City of Manchester Fire Brigade.--Pay and Superannuation Allowances - - - - 683

Appendix, No. 20.

Paper handed in by Mr. Lovell, 13 July 1876:

Letter from Mr. G. W. Lovell to Mr. J. Pollard, dated 1st January 1872 - - - - 684

Appendix, No. 21.

Papers handed in by Mr. Swanston, 13 July 1876:

Fire Engine Stations which have been closed, and List of Fires which have taken place in the neighbourhood thereof since dates of closing - - - - - - - - 685

London Salvage Corps.—Recapitulation and Detail of Arrangement agreed upon by the Committee at its Meetings, on 19th and 26th July and 27th September 1875, upon the Report of the Sub-Committee on Pensions - - - - - - - - 686

Appendix, No. 22.

Paper handed in by Sir James Hogg, a Member of the Committee:

Report by the Chief Officer of the Fire Brigade on the Letter from Mr. Lovell, on behalf of the Associated Fire Offices, relative to the Operations of the Brigade at the large Fire in Rotherhithe-street on the 14th of December 1871, and especially with reference to the Time which elapsed before the Floating Engines were brought into action - - - - - - - - - - - - - - - - - 688

Appendix, No. 23.

Paper handed in by Captain Harris:

Metropolitan Police Fire Brigade.—Return showing the Number of Steam and Hand Engines, and likewise the Number of Men proposed at the several Stations named - 692

Appendix, No. 24.

Paper handed in by Captain Harris:

Metropolitan Police.—Return of the Total Number of Police Stations within the Metropolitan Police District, the Number within, and the Number beyond, the Boundary of the Metropolitan Board of Works - - - - - - - - - - - 694

Appendix, No. 25.

Paper handed in by Mr. Yelland:

Liverpool Salvage Committee Report for 1875 - - - - - - - - - - 695

Fires in Liverpool from 1st January to 31st December 1875 - - - - - 695

Supposed Cause of Fires - - - - - - - - - - - - - - 697

Working Account from 1st January to 31st December 1875 - - - - - - 697

Balance Sheet - - - - - - - - - - - - - - - - - 697

The District served by the New River Company is tinted thus
West Middlesex
Grand Junction
West Middx & Grand Junct.
Chelsea
East London
Southwark & Vauxhall
Southwark & Vauxhall & Lambeth
Lambeth
Kent

The districts with respect to which notice of constant service has been given to the Metropolitan Board are shewn thus ▨▨ but the constant supply has not yet been given in all cases.

The Fire Brigade Stations are shewn thus ● or ▬
Escape ●
Metropolitan Police Stations ●

The four fire brigade districts are distinguished by the letters A. B. C. D. and the divisions between the three on the north of the Thames are shewn by dotted lines thus -----

Scale 2 Inches = 1 Mile

Limits of the Jurisdiction of the Metropolitan Board of Works

A
B
C
D

SURREY
MIDDLESEX
ESSEX

FINCHLEY
HENDON
HARROW ON THE HILL
EENHILL
GREENFORD GREEN
WILLESDEN
WILLESDEN GREEN
APPERTON
PERIVALE
TWYFORD
HARLESDEN GREEN
KILBURN
PADDINGTON CANAL
ST. JOHN'S WOOD
PRIMROSE PARK
PORTLAND TOWN
REGENTS PARK
KENTISH TOWN
HAMPSTEAD
CRICKLEWOOD
HIGHGATE
BISHOPS WOOD
CROUCH END
HORNSEY
ALEXANDRA PARK
MUSWELL HILL
TOTTENHAM
TOTTENHAM HIGH CROSS
WOODFORD
WALTHAMSTOW
SNARESBROOK
EPPING FOREST
LEYTON
LEYTON STREET
LEYTON STONE
WANSTEAD
LOW LEYTON
EPPING LOWER FOREST
ILFORD
LITTLE ILFORD
STAMFORD HILL
STOKE NEWINGTON
UPPER CLAPTON
LOWER CLAPTON
HOMERTON
HACKNEY
HACKNEY WICK
KINGSLAND
DALSTON
HIGHBURY
UPPER HOLLOWAY
HOXTON
BOW
STRATFORD
WEST HAM
WEST HAM ABBEY
PLAISTOW
BARKING
VICTORIA PARK
HACKNEY MARSH
WEST HAM ABBEY MARSH
BROMLEY
STEPNEY
POPLAR
WEST INDIA DOCKS
ISLE OF DOGS
VICTORIA DOCKS
GREENWICH
EAST GREENWICH
GREENWICH PARK
NEW CROSS
HATCHAM
DEPTFORD
DEPTFORD NEW TOWN
DEPTFORD COMMON
ROTHERHITHE
BERMONDSEY
NEW CHARLTON
CHARLTON
WOOLWICH
WOOLWICH COMMON
PLUMSTED
SHOOTERS HILL
BLACK HEATH
LEWISHAM
BROCKLEY
CAMBERWELL
PECKHAM
PECKHAM RYE
EAST DULWICH
NUNHEAD
CAMBERWELL NEW ROAD
KENNINGTON
LAMBETH
SOUTH LAMBETH
STOCK WELL
N. BRIXTON
BRIXTON
EAST BRIXTON
WEST BRIXTON
CLAPHAM
CLAPHAM COMMON
BATTERSEA
BATTERSEA PARK
BATTERSEA RISE
WANDSWORTH
PUTNEY
EAST SHEEN
MORTLAKE
RICHMOND
THE PARK
ISLEWORTH
KEW
KEW GARDENS
CRISWICK
BRENTFORD
BARNES
FULHAM
SOUTH KENSINGTON
NORTH END
HAMMERSMITH
SHEPHERDS BUSH
ACTON
EALING
LITTLE EALING
WORMWOOD SCRUBS
KENSINGTON GARDENS
HYDE PARK
WALHAM GREEN
KENSAL GREEN
THE MEADS
THAMES
RIVER

APPENDIX.

Appendix, No. 1.

MAP OF LONDON,

SETTING OUT

The different STATIONS of the FIRE BRIGADE, the STATIONS of the FIRE ESCAPES, the POLICE STATIONS, and the BOUNDARIES of the several WATER COMPANIES.

(See MAP opposite.)

Appendix, No. 2.

PAPERS put in by Captain *Shaw*.

Appendix, No. 2.

MAIN DRAINAGE COMMITTEE.—1 May 1866.

I HAVE to report that the men at present in the training school at Thames-street are now fit for distribution throughout the regular stations, and to recommend that 15 more men be appointed at an early date.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

MAIN DRAINAGE COMMITTEE.

Chief Station, Watling Street,
1 June 1866.

REFERRING to the minute of the 11th of May, I beg to remind the committee that I am without any instructions as to the course to be pursued with regard to the nine following parish fire-engine stations after the 30th of June, viz. :—

Islington.	South Hackney.
Holloway Road.	Deptford.
Hackney.	Peckham.
Stoke Newington.	Wandsworth.
De Beauvoir Town.	

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

Metropolitan Board of Works, Fire Brigade,
Chief Station, Watling Street, London, E.C., 27 June 1866.

THE Board has agreed to purchase the following 22 parish engines, the first-mentioned 12 of which have been delivered, viz. :—

1. St. Anne and St. Agnes - - Wellclose Square.
2. St. Dionis Backchurch - - Poplar.
3. St. Anne's, Westminster - - Highgate.
4. St. Paul's, Shadwell - - - Watling Street.
5. St. Mary Aldermary - - - Thames Street.
6. St. George-the-Martyr - - Whitecross Street.
7. St. Paul's, Covent Garden - - Has been at Watling Street, now at Rotherhithe; no pole shafts or springs.
8. St. Mary Bothaw - - - Farringdon Street.
9. Whitechapel (large) - - - Whitechapel.
10. Whitechapel (small) - - - Thames Street.
11. Paddington (large) - - - Paddington.
12. Paddington (small) - - - Paddington.
13. Chelsea (workhouse).
14. Islington.
15. Kensington.
16. Notting Hill.
17. Hackney (the church).
18. Hackney, De Beauvoir Town.
19. Hackney, Stoke Newington.
20. Greenwich.
21. St. Leonard's, Shoreditch.
22. Clapham.

The

The St. Anne's (Westminster) engine was sent to Highgate immediately on its purchase, and the two engines belonging to Paddington and one to Whitechapel, have been retained at their respective stations since the Board has taken over the duties, and the St. Dionis Backchurch engine has gone to Poplar to fill up that station; this leaves seven parish engines. The remaining six, though not adapted for outlying districts at a distance from powerful aid, may be safely used for the auxiliary stations when the Board has developed the existing Fire Brigade by adding the proposed permanent stations, until which time I should recommend that these engines be retained as they are, as it would be a considerable expense to alter them for general work, and they would no doubt eventually require to be restored to their present condition for the requirements of the auxiliary stations which would be altogether local, and therefore essentially different from what is requisite for general purposes. These six are now distributed between Thames-street and the regular stations, and I am busily engaged in overhauling and assimilating them, so that the screws and other parts may fit all the hose and gear in general use, and I hope shortly to be in a position to report that at a mere trifling cost, for absolute necessaries, I shall be able to render them all available for local work, so as to relieve the larger engines on emergencies; at the present moment, in consequence of the four new stations having been added by the Board during the present year, it would have been impossible for me to spare any of the larger engines for ordinary repairs and overhaul, but for these little machines which have been by a variety of devices at various times made useful for a short period on emergencies.

The fact is we are, and always have been, very considerably understocked, both in engines and other gear, and it has occasionally required our utmost efforts to keep up even a semblance of general protection when a large fire has been going on.

I do not know how far the Board might wish our weakness to be publicly known, but as between the Board and me there can be no possible reserve, and therefore I do not hesitate to say that under the old regime the metropolis was, during the continuance of any fire, almost entirely unprotected, and that, although the addition of the steamers by the Board has made a most important difference in this respect, still if the Board casts on me the duty of filling up a large number of new stations I can only carry out their wishes in one of two ways, viz., either by withdrawing from the old stations the increased protection which has already proved so valuable, or by adding new stock for the purpose, and it is clear that the public would not longer tolerate, or at least would not approve being obliged to trust to the old parish gear for their general protection.

This is a point which it appears to me that a word from you might clear up; we have bought at a fair valuation, in fact at a good bargain, a large portion of the best of the parish stock in London. This stock, when somewhat altered, will be well adapted to subsidise the strength of the Brigade, but it is by no means of itself sufficient for the general protection of the metropolis. Had it been so, or had it and the Brigade kept up by the insurance companies together been so, there would have been no need for any change. It was the fact of these two systems combined being found insufficient, which led to the passing of the Act which placed the whole fire service of the metropolis under the jurisdiction of the Metropolitan Board of Works. If I were to report now that these parish engines were in all cases fit for the general protection of the metropolis, I should be going in direct opposition to all my experience, and moreover neither the public nor the Board would believe me. The serious and important duty is cast on the Board of providing increased protection against fire, and my business as chief officer of the Board in this department is simply to offer professional advice, for which of course I am responsible. On the present occasion that advice may be summed up in the following words: the Board wishes to take over the duties of 16 fire-engine stations on next Sunday, and they cannot spare out of the stock of engines, which will on that day be in their hands, more than six which would be suitable for the purpose. They therefore require 10 more to make up the necessary number, but instead of purchasing these engines of the full size required, I have recommended that they be provided out of the existing stock, which should be replaced by new engines of a smaller size, and therefore at a considerable smaller cost. When this has been done the whole of the present stock will have been absorbed, and then for any new stations which the Board may wish to establish there will be a further expense of about 300 *l.* or 350 *l.* in each case.

(signed) *E. M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

The Chairman,
Main Drainage Committee.

Appendix, No. 2.

Metropolitan Board of Works, Fire Brigade,
Chief Station, Watling Street, London, E. C.,
11 July 1866.

I HAVE to report that the number of stations taken over by the Board on the 1st of January last was 19, and the number of men 129; and that since that time the Board has added 21 stations and 55 men, leaving the present strength of the Brigade 40 stations and 184 men.

The men appointed by the Board have turned out very well, and owing to the advantages arising from the establishment by the Board of the training school in Thames-street have acquired a knowledge of their profession much more quickly than could have been possible under the old system. I presume it will be the desire of the Board to go on strengthening the Brigade to meet the great and ever-increasing requirements of the metropolis. It is therefore my duty to recommend that 30 additional men be appointed.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London, E.C.,
13 October 1866.

I HAVE to report that the men appointed before the recess have turned out satisfactorily, and to recommend that the 25 vacancies which have occurred since the Board undertook the charge of the Fire Brigade be now filled up.

The number of men who joined from the old establishment was -	129
The number since appointed by the Board has been - - -	103
Making a Total of - - -	232

Since the 1st of January the Brigade has been reduced as follows, viz.:—

Resignations - - - - - - - - - - -	21
Dismissals - - - - - - - - - - -	2
Deaths - - - - - - - - - - -	2
TOTAL - - -	25

leaving the number of men, for the present, only - - - - - 207

although the number of stations has been more than doubled since the beginning of the year.

I, therefore, beg to recommend that 25 men be appointed at an early date.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

Chief Station, Watling-street, E.C.,
6 December 1866.

I HAVE to report that for some time past I have been busily engaged in endeavouring to ascertain some mode in which the services of the parish engineers lately appointed by the Board might be made of greater value than they are at present, and that I have at length devised a plan which will, I think, be satisfactory to all parties. It will be in the recollection of the Board that they originally appointed these men in order that they might be employed in charge of small out-stations. The Board did not consider it advisable that they should be placed in any of the established ranks of the brigade, but gave them pay of 6 *s.* a day, equivalent to that of the regular engineers.

For local purposes this arrangement works fairly enough, but in the case of large fires it is attended by a number of inconveniences, the most serious of which is, that as their rank and position with regard to the regular firemen is undefined, it is impossible either to give them charge of the firemen or to give the firemen charge of them.

The discipline of the establishment has in consequence been in constant peril on every great emergency which has occurred since their appointment, and nothing but the care of the officers, and the good sense and temper of the men, have prevented difficulties arising. Had I applied some six months ago to have these men placed in the rank of which they have been drawing the pay, I should have committed an act of great injustice to the sub-engineers, who have served a long time in the brigade for the sole purpose of receiving promotion in their regular turn. Since that time, however, the Board has been pleased to promote seven of the sub-engineers, and therefore, although the same principle holds good now, it does so in a much less degree, inasmuch as it affects only the men who are lower down in the general list.

Even

Even in their case the apparent injustice of bringing in men over their heads was so great that I have for some time hesitated to deal with the matter at all; however the constantly recurring risk to which I have before referred at length became so serious that I felt that I had no option but to bring the matter under the notice of the Board.

I, therefore, called together the seniors of each of the ranks, and laid before them the whole of the circumstances, pointing out more especially the damage which must accrue to the reputation of the brigade from loss of discipline in case of our remaining as at present, and after a full explanation, I have received from them an assurance that they will be satisfied with whatever course is adopted.

I have, therefore, to recommend that the undermentioned parish firemen at present in the service of the Board be appointed to the rank of engineers in the brigade, with the numbers attached to their names as follows, viz.:—

No. 25. William Palmer.	No. 29. James Bridge.
„ 26. William Piggott.	„ 30. Charles Boltler.
„ 27. John Barton.	„ 31. Charles Campbell.
„ 28. Thomas Smart.	„ 32. Henry Knight.

I beg also to recommend that William Wood, who was appointed at 4 *s.* 6 *d.* per day, be placed in the first class, of which that is the pay, and be numbered 97. This will make the first class consist of 50 men, and I recommend that the second class, which should eventually consist of the same number, 50, and in which there are now only 30, be allowed to remain as it is for the present, and that the 20 vacancies be filled up at a future time by placing in them the most deserving of the third class as soon as these latter have attained a year's service, which, however, will not be for some months to come.

I should also recommend that when any of the third class have done a year's good service, and cannot get into the second class owing to the numbers of the latter being full, the third class receive an addition of 6 *d.* a day to their pay until vacancies occur for them in the second class.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

Metropolitan Board of Works, Fire Brigade,
Chief Station, Watling-street, London, E.C.,
12 January 1867.

Sir,

We, your humble servants, the third-class firemen, beg leave to say that on the 27th of July last we addressed a petition to the Metropolitan Board of Works praying for an increase of pay. The answer we received was that we were to wait till the commencement of the present year, 1867. We now beg respectfully to request that you will draw the attention of the Board to the subject, as we continue to find the pay we now receive, viz., 1 *l.* 1 *s.*, quite inadequate to meet the present high price of provisions, &c. &c., and we feel assured that on the Board taking into consideration the arduous nature of our duties they will not consider this petition misplaced.

We have no more to add, except that we leave ourselves entirely in their hands, satisfied that our case will meet with every consideration from yourself and our honourable masters, the members of the Board.

We have, &c.
(signed) *The Third Class Firemen.*

Captain E. M. Shaw.

Received, 12th January 1867.
Forwarded to Board, 14th January 1867.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London, E.C.,
14 January 1867.

I have the honour to recommend to the favourable notice of the Board the accompanying memorial from the third-class firemen of the brigade.

There can be no doubt that the pay of 3 *s.* a day is very low, and that a slight addition may have the effect of securing the permanent services of these men.

There are at present several vacancies in the second class, and I should recommend that a corresponding number of the most deserving of the third class be moved up into the second class as soon as they have completed one year's good service, which they will have done before the end of next month.

This will effectually provide for 22 of the seniors, and with regard to the remainder, I should recommend that, when each has attained one year's good service, and cannot get into the second class owing to the numbers of the latter being full, he should receive an addition

Appendix, No. 2.

addition of 6 *d.* a day to his pay, until a vacancy occurs for him in the second class.

Several of the third class men have already left, but others have remained on, and as many of them have already proved themselves valuable servants, and appear likely, with a little encouragement, to follow the profession permanently, I beg to present their memorial to the favourable notice of the Board, and to offer the foregoing recommendations, which at a very moderate cost, will meet the requirements of the case.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

Fire Brigade Committee.

Extract from Minutes of Fire Brigade Committee, 1st October 1867.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
2 November 1867.

"Captain Shaw authorised to continue the employment of the Supernumerary Fire-escape Conductors for a further period of one month, viz., until the 1st of November next."

I have to report that, under the authority of the above resolution, I have carried on the fire-escape duties up to the 31st ultimo partly by means of the men taken over by the Board, and partly by means of some of the old servants of the Fire Escape Society, hired at the rate of 4 *s.* a night each. Since the 31st ultimo I have done the whole of the work with our own men, that is to say, the men taken over from the Society and the regularly appointed men of the Brigade; but, as I have been short of hands every night since, I have been compelled to fill up the stations with the same men whom I had previously to the 31st employed for escape duty.

It will be in the recollection of the committee that up to Midsummer there were in the Fire Escape Society 90 men, of whom the Board took over 67, leaving a deficiency of 23 on the original number.

Since that time the Brompton and Peckham Stations have been opened and manned, and the Brixton and Westminister Stations are now nearly complete, and I should therefore recommend either that the original number of men be made up by appointing 23 now, or that I be authorised to continue the employment of the old fire-escape hands at the rate of 4 *s.* a night each.

I have been endeavouring to the utmost of my power to reduce expense by hiring as few men as possible to fill up the stations; but the regular hands have been complaining bitterly of want of rest, and I have already several times been compelled to hire men by day as well as by night to assist the firemen in carrying on the duties.

Perhaps this will be better understood if I mention that the average number of men on duty by day is 81, and that of men on duty by night 171, making a total of 252 fixed duties in every 24 hours, independently of those connected with keeping all our machinery in order and attending drills and fires.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

To the Honourable the Metropolitan Board of Works.

The humble Petition of Walter Hawkins, George Warr, Alfred Devonshire, Henry Bateman, William Mahony, John Howell, Frederick Kelly, George Rowe, Henry Douglas, Joseph Butterworth, John Fordoff, James Cotterell, James Rogers, Daniel C. Perryman, Robert Hutchings, jun., Robert Bailey, and John Lesley,

Sheweth,

That your Petitioners, Hawkins, Warr, Devonshire, Bateman, Mahony, Howell, Kelly, Rowe, Douglas and Butterworth, were originally members of "The Royal Society for Protection of Life from Fire," and upon the dissolution thereof were engaged, and have ever since continued to act, as supernumerary members of the Fire Brigade, and in such capacity have had charge of the Metropolitan fire escapes entrusted to their care.

That your Petitioners Tordoff, Cotterell, Rogers, Perryman, Hutchings, Bailey, and Lesley, although not originally employed by the Royal Society, have since been engaged as supernumerary members of the Fire Brigade.

That all your Petitioners have faithfully and diligently performed their duties during the period of their employment in the Brigade.

That

That several of your Petitioners gave up actual, and others prospective, employment, for the purpose of entering upon their present duties, and humbly hope that this fact, coupled with the circumstance of their having been induced to enter upon their supernumerary duties under the impression that they would be enrolled on the permanent staff of the Fire Brigade so soon as your honourable Board should have perfected your arrangements, will secure their appointment, and thus prevent their being thrown out of employment at a period of the year when work is exceedingly difficult to be obtained.

And your Petitioners will ever pray, &c.

Signed on behalf of the Petitioners, and at their request, by your Petitioners.

FIRE BRIGADE COMMITTEE.

EXTRACT from business paper of Fire Brigade Committee, 26th November 1867.

Watling-street, E.C., 25 November 1867.

"To further consider Petition of former Fire-escape Conductors, praying the Board to take them into their service, and to receive Report from Captain Shaw thereon."

WITH reference to the above I have to report, that the statements in the petition of the supernumerary fire-escape men appear to me to be correct.

They are all good and trustworthy men, and have carried out most satisfactorily all the duties which, under the sanction of the committee, I have entrusted to them during the past five months.

We are at present 23 men short of the original force of the fire-escape men, and, in consequence of the great increase in the number of duties, I am of opinion that it will be impossible to carry on the work satisfactorily without an addition of something like the number now deficient. Since sending in the petition one of the men, George Warr, has withdrawn his name, and ceased to do duty. There remain, therefore, only 16, and I should strongly recommend the committee to avail themselves of their services by granting the prayer of their memorial.

The number of regular fixed duties now done by the brigade is, by day 81; by night 171; making a total for every 24 hours of 252, and these fixed duties are altogether independent of those connected with keeping all our machinery in order, and attending drills and fires.

The consequence is, that there are numbers of men who scarcely ever have a night in bed, and who are besides kept at hard work from breakfast to dinner (or from 9 a.m. to 1 p.m.) every day. They are not at all in the habit of complaining; but they are naturally most anxious for a little relief, and I sincerely trust that the committee may be pleased to put me in such a position, that I may be enabled to give every man an occasional night off during the winter, which with the present number of men would be impossible.

I am now, under the authority of the committee, employing all these men at the rate of 4 *s.* a night each; but in the event of their enrolment their pay would be only 3 *s.* a day; so that, besides the additional strength which the brigade would receive from having their services for 24 hours instead of 12, there would also be a considerable economy in the reduction of their pay.

I have carefully considered the whole subject of the organisation and duties of the force with special reference to the subject of this petition, and I consider that if these 16 men be now enrolled, and no other stations be added besides those at present in course of construction, it will be quite possible to carry on the duties of the brigade satisfactorily through the winter, except in the event of great sickness, or several heavy fires happening together, in either of which cases I can easily obtain the services of some of the old hands of the Fire Escape Society for a night or two to carry the brigade through the emergency.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

Appendix, No. 2.

FIRE BRIGADE COMMITTEE.

EXTRACT from Minutes of Fire Brigade Committee, 31st March 1868.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
22 April 1868.

"Captain Shaw to report as to the necessity of a fire escape at Deptford, and if one is necessary, as to the most suitable locality for it."

WITH reference to the subject of the above order, I have to report that at present the nearest fire escapes to Deptford are stationed as follows, namely :—

At Greenwich, about a mile distant.
At Commercial Docks, about a mile and a quarter.
At Rotherhithe, about a mile and a half.

It would be most desirable to have a fire escape at Deptford itself, and the Broadway, as suggested by the vestry, would be an excellent position for it; but with our present staff it would be impossible for us to undertake any further duties, and, if it is decided to place an escape at Deptford, I should recommend that two men be added to the force for the purpose of working it alternately.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
25 May 1868.

IN presenting the accompanying list, I beg to call special attention to the amount of duty which the men are now called on to do.

In the following summary I have made no deduction for sick men, as we have in almost every case to hire supernumeraries to replace them, and consequently in a few cases the men of a station seem to have had an easy time during the past month. This, however, is accounted for by the fact of their having been sick or otherwise disabled, and their duties having been done by their comrades of other stations or by supernumeraries.

District.	Number of Men.	Number of Duties for the Month.	Average Number of Duties each Day.	Average Number of Duties done by each Man in each Day of 24 Hours.
A - - - - -	77	3,320	111	1·4
B - - - - -	87	2,818	94	1·1
C - - - - -	80	2,779	92	1·2
D - - - - -	66	2,430	81	1·2
TOTAL - - -	310	11,347	378	1·2

I am convinced that no other force in this metropolis can show anything approaching to this number of duties, which, in fact, have reached such a point that it is only by assisting each other in occasionally undertaking extra work that the men can obtain the small amount of leave which it is absolutely necessary that they should have.

In conclusion, I have to mention that I have made no entry of men employed at keeping our large quantity of machinery in order—a duty which generally occupies all hands at home from morning roll-call to dinner-time—neither have I made any entry of attending drills or going with messages, both of which take up a considerable portion of the men's time.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

Metropolitan Fire Brigade.

Table showing Distribution, Number of Calls received, and Duties done during the Month of April 1868.

No.	Station.	Number of Engines.		Number of Escapes.	Number of Firemen.	Number of Horses.	Number of Calls.	Number of Duties done.
		Steam.	Manual.					
2	Victoria-street	1	3	1	9	4	56	439
3	Horseferry-road	–	1	1	4	–	12	68
4	Chelsea	–	1	3	4	2	18	197
5	Brompton	1	1	2	6	2	30	275
7	Kensington	–	1	1	4	2	20	210
8	Hammersmith	–	1	–	3	2	5	120
9	Bayswater	–	1	1	3	1	13	91
10	Notting Hill	–	1	1	4	1	18	142
11	Paddington	–	2	3	6	2	30	305
12	St. John's Wood	–	1	3	6	2	13	270
14	Baker-street	1	2	3	6	3	31	310
15	Portland-road	–	1	3	9	2	33	478
16	Regent-street	1	2	4	8	2	35	212
17	Highgate	–	1	2	5	2	12	203
18	Farringdon-street	1	2	2	15	2	57	496
19	Islington	1	2	4	10	2	16	271
22	St. Luke's	1	2	3	9	2	54	252
23	Watling-street	1	3	1	20	6	88	825
24	Chandos-street	1	2	3	11	2	42	324
25	St. Giles's	1	1	2	9	2	34	293
26	Holborn	1	1	4	10	3	41	273
27	St. Pancras	–	1	2	3	–	5	84
30	Wellclose-square	1	2	2	11	3	43	381
31	Bethnal-green	–	1	2	6	2	29	210
32	Hackney	–	1	1	4	2	24	140
33	South Hackney	–	1	–	3	2	24	107
34	Stoke Newington	–	2	1	4	2	26	145
35	Mile-end	–	1	1	6	2	24	190
36	Bow	–	1	1	4	2	18	161
37	Ratcliffe	1	2	3	8	2	23	277
38	Poplar	1	1	2	7	3	16	207
40	Bishopsgate	1	3	3	11	2	50	355
41	Shoreditch	1	1	2	7	2	39	236
42	De Beauvoir Town	–	1	1	4	–	12	149
43	Whitechapel	–	1	2	5	2	26	221
44	Kennington	–	2	3	10	3	38	372
45	Southwark	1	2	2	10	3	23	367
46	Tooley-street	1	1	3	12	2	17	362
47	Rotherhithe	1	2	3	11	2	19	489
51	Greenwich	–	2	1	4	2	5	117
54	Camberwell	–	2	2	4	2	3	186
56	Brixton	–	2	1	4	2	4	179
60	Waterloo	1	1	2	11	3	34	358
	Total			87	310	91	1,160	11,347

Appendix, No. 2.

Fire Brigade Committee.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
6 June 1868.

I have to report that the time has arrived at which it has become necessary to make arrangements for manning the new stations now in course of erection at the following places, namely,—

Hampstead,	Old Kent-road,
Fulham,	Clapham,
Crystal Palace,	Lewisham,
Woolwich,	

and I beg to recommend that the number of engines and escapes be first decided on, and that the number of men be settled according to the following scale, namely,—

For 1	engine	3 men.
1	do. and 1 escape	4 „
1	do. and 2 escapes	5 „
1	do. and 3 „	6 „
2	do.	4 „
2	do. and 1 escape	5 „
2	do. and 2 escapes	6 „
2	do. and 3 „	7 „
3	do.	5 „
3	do. and 1 escape	6 „
3	do. and 2 escapes	7 „
3	do. and 3 „	8 „

These numbers would hardly be sufficient for the working stations, but I should consider them ample for those named, as the principal duty will consist in keeping the watches, and not in working at fires.

As this is in continuation of my report of the 25th ultimo on the subject of the number of duties at present done by the men, I beg to add that it would be most desirable to give every man in the force one night in bed each week, but that with the existing number such an arrangement is impossible.

I append a table showing that, without reference to the new stations, it would require 32 additional men to carry out this most desirable object, and I would most respectfully urge the advisability of dealing with this subject at an early date, as I cannot doubt that sooner or later it will force itself into notice, and that it will be much more satisfactory to the committee to be informed of the facts now by their own officer, than to hear of them after some disaster has taken place.

If the committee wish to satisfy themselves further in this matter, I would suggest an inspection of the duty-books in the several stations, and examination of the officers and men of the brigade, and a consultation with the four surgeons, after which I feel sure that they would see the advantage of adopting the course which I have ventured to propose.

I should suppose that the number of men which the committee will wish to put into the new stations now referred to will be altogether about 28, so that the total number of men to be added would be about 60.

I am quite aware of the magnitude of this proposal, which involves an expenditure of over 3,000*l.* a year; but after careful deliberation I can come to no other conclusion than that I should be wanting in my duty to the committee, if I were to withhold from them the facts here stated.

I conclusion, I have only to add my sincere conviction that this increase of the force would add very considerably to the means which now exist for the protection of the metropolis, and would much more than repay itself by the saving of life and property.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

Appendix, No. 2.

TABLE showing the Present Distribution of the Fire Brigade, and the Number of Men required in order to allow every Man one night in bed each week.

No.	STATION.	Number of Engines.	Number of Escapes.	Number of Special Duties.	MEN. Present Number.	MEN. Required Number.	MEN. Difference.	
2	Victoria street	3	1	1	9	9	–	
3	Horseferry-road	1	2	1	4	5	1	
4	Chelsea	1	3	–	5	6	1	
5	Brompton	2	2	1	6	6	–	
7	Kensington	1	1	2	4	5	1	
8	Hammersmith	2	–	2	3	4	1	
9	Bayswater	1	1	–	3	4	1	
10	Notting Hill	1	1	1	4	5	1	
11	Paddington	2	3	–	6	6	–	
12	St. John's Wood	1	3	1	6	7	1	
14	Baker-street	2	3	2	8	9	1	
15	Portland-road	2	3	4	10	10	–	
16	Regent-street	3	4	1	9	11	2	
17	Highgate	1	2	1	5	6	1	
–	A. Fire-float	–	–	–	–	–	–	Worked from various stations.
18	Farringdon-street	3	2	8	15	15	–	
19	Islington	3	4	3	10	11	1	
22	St. Luke's	3	3	4	9	11	2	
23	Watling-street	4	1	8	15	16	1	
24	Chandos-street	3	3	4	11	12	1	
25	St. Giles's	2	2	4	9	9	–	
26	Holborn	2	4	4	10	12	2	
27	St. Pancras	1	2	–	3	5	2	
–	B. Fire-float	–	–	–	–	–	–	Worked from various stations.
30	Wellclose-square	3	2	4	11	12	1	
31	Bethnal Green	1	2	1	6	7	1	
32	Hackney	1	1	–	4	4	–	
33	South Hackney	1	–	–	3	3	–	
34	Stoke Newington	2	1	–	4	4	–	
35	Mile End	1	1	2	5	6	1	
36	Bow	1	1	–	4	4	–	
37	Ratcliff	2	3	2	8	8	–	
38	Poplar	2	2	2	7	7	–	
40	Bishopsgate	3	3	3	11	11	–	
41	Shoreditch	2	2	2	7	7	–	
42	De Beauvoir Town	1	1	–	3	4	1	
43	Whitechapel	1	2	1	5	7	2	
–	C. Fire-float	–	–	–	–	–	–	Worked from various stations.
44	Kennington	2	3	2	9	11	2	
45	Southwark	3	2	7	10	11	1	
46	Tooley-street	2	3	5	12	12	–	
47	Rotherhithe	3	3	3	11	11	–	
51	Greenwich	2	1	–	4	4	–	
54	Camberwell	2	2	–	5	6	1	
56	Brixton	2	1	1	4	5	1	
58	Wandsworth	2	–	–	2	3	1	
60	Waterloo	2	2	4	11	11	–	
–	D. Fire-float	–	–	–	–	–	–	Worked from various stations.
	TOTAL				310	342	32	

6 June 1868.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
18 June 1868.

IN continuation of my report of the 6th instant, on the subject of manning the new stations, I have now further to report that I understand from Mr. Cresy that those at Old Kent-road and Lewisham respectively will shortly be ready for occupation, and I beg to request

Appendix, No. 2.

request that the committee may be pleased to give me instructions concerning them as soon as possible.

The course pursued in the case of Wandsworth Station, namely, sending two firemen there and hiring two supernumeraries to fill their places, and carry on the duties which they had been previously doing, was the only course which, under the circumstances, it was possible to take; but I must not conceal from the committee that it was not unattended with a certain amount of risk, as it is impossible in London to find men who can be trusted to carry out satisfactorily such duties as ours, unless they are subjected to most strict discipline, and this, of course, cannot be maintained with strangers who are only hired by the day or night. Every precaution is taken to insure a proper supervision of such supernumeraries as we are obliged to employ, and hitherto we have been most successful in keeping them to their work; but it will be remembered that up to this time their number has been small, and that we have used them almost exclusively for taking charge of fire escapes, a duty which they fairly understood.

I would, however, most respectfully urge on the committee that a continuance of the same course on a large scale might be attended with serious danger, and I would therefore recommend the immediate appointment of a sufficient number of men to meet the present emergency. For this purpose I beg to name 40 as the most convenient number, pending the report of the sub-committee, and I have no doubt that after the sub-committee have examined into the present condition of the brigade, with regard to the duties and labours of the men, they will report in favour of providing the remaining number to complete the 60 asked for in my report of the 6th instant.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
2 July 1868.

IN compliance with the order passed by the committee at their last meeting on the 23rd ultimo, I beg to make the following recommendations concerning the new stations at Old Kent-road and Lewisham respectively.

I should recommend that six men be placed at the Old Kent-road Station, and three men at the Lewisham Station, but that these stations be not opened for the present, as the brigade is not sufficiently strong in numbers to undertake new duties without considerable risk.

I have no doubt whatever that, after the committee have paid their contemplated visit to the stations, and examined the officers in charge, they will come to the conclusion that, with the present force, no further distribution of the men could be made, and that no fresh duties could be undertaken, without serious danger to those parts of London in which stations are now placed.

In connection with this question, I beg to ask the committee to reconsider the temporary authority given to me on the 26th of May last to place two men at Wandsworth Station, as I find that the entire time of these men is occupied in keeping the watches, and that consequently I cannot make use of them for any other purpose whatever, whereas if the committee would be pleased to allow a third man to be placed there, I could always avail myself of the help of one of the three to relieve the overworked men in town, and thus distribute the heavy labour all round as hitherto.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE.

28 July 1868.

I HAVE to report that the present condition of the fire brigade with regard to numbers is so critical that I feel I should be wanting in my duty to the committee if I did not bring the matter again under their notice, for the purpose of most respectfully asking that they may be pleased to give me instructions as to the course to be pursued for carrying on the duties during the recess.

I send herewith the returns ordered by the committee on the 21st instant, and I have directed the officers in charge of the several stations to attend at the office of the Board for the purpose of giving any further explanations that may be necessary, but I cannot doubt that the committee will, after the perusal of these papers, be fully satisfied as to the urgency and importance of this question.

A reference to our supernumerary pay-sheet will show that I am employing, in addition to the three coachmen, the four watermen, and the six specially authorised by resolutions of the committee, only such men as are absolutely necessary to replace the regular men on the sick-list; but I think it right to inform the committee that although all ranks are still doing their best to carry on the duties satisfactorily, there is at the present moment among the

the men a feeling of very great discontent at the amount of labour which they are called on to undergo, and I would most respectfully urge on the committee the advisability of dealing with the matter in some way before the recess, and not leaving it in its present unsettled condition until the Board meets again in the end of September.

To give the men some immediate relief, it appears to me that only two courses are open; one is to discontinue some of the present duties, and the other is to add a sufficient number of men to carry on the existing duties without overworking the staff, and I would most respectfully beg the committee to meet the men's wishes at as early a date as possible in one or other of these ways.

If the former course be selected, I should recommend that I be authorised to discontinue the watches at the following places, namely:—

The New Queen's Theatre,
The Prince of Wales's Theatre,
The Holborn Theatre,
The Probate Office,
The Copyhold Office,
The Seamen's Registry Office,
The B Fire Float, and
The C Fire Float.

Putting the two latter for a time under the charge of hired watermen.

I should also suggest that our own workshops be closed, and that everything in the way of repairs be done for the present at the factories of the engine builders. This arrangement would enable me to give the men an amount of immediate relief sufficient to remove all reasonable ground of complaint.

If the committee consider the second course the more advisable, and time be wanting for a permanent settlement of the question, I would suggest that a selection be made from the candidates' list, kept at the Board, of the names of such men as are likely to be of immediate use, and that I be authorised to employ a sufficient number temporarily at 3 *s.* a day each, which would be a lower rate of pay than that previously ordered.

This would give the firemen the immediate relief which they are so anxiously expecting, and would not necessarily involve the Board in any increased permanent expense, as the services of the men could be dispensed with at any moment.

In conclusion, I beg most respectfully to mention that my reason for once more urging this matter on the consideration of the committee is, that I see considerable danger likely to arise from leaving such a question unsettled for the next two months, and that I consider it would be much more satisfactory to the committee to deal with it themselves than to leave it to be dealt with by me in their absence, and probably under circumstances of exceptional difficulty and disadvantage.

A few moments' conversation with the officers in attendance will satisfy the committee that I am not in any way exaggerating the danger and trouble likely to arise from leaving the matter in its present condition for the next two months.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

Fire Brigade Committee.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
23 September 1868.

"Captain Shaw to employ temporarily the following numbers of men for the purpose of carrying on the duties at the several stations":—

Wandsworth	2
Old Kent-road	2
Lewisham	2
Woolwich	2
Hampstead	2
Deptford	1
	11

I have to report that, in accordance with the above instructions, I have engaged the temporary services of 11 men, and that they are all now at work, but not in the stations mentioned, as it was necessary to send experienced men to these places to carry on the duties, and the temporary men have been made available for assisting the regular firemen in the other stations.

I have also got the names of 24 men who are willing to accept irregular employment as supernumeraries at 3 *s.* a day, when required to replace sick or wounded men, or to fill vacancies caused by casualties.

Appendix, No. 2.

I am giving these men as much general instruction as, under the circumstances, it is possible to do, and I have no doubt that in future it will be found a great advantage to be able to strengthen the brigade temporarily by means of these partially trained men, in any cases of pressing emergency.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
10 October 1868.

IN continuation of my former reports on the subject of the duties done by the men, I have now the honour to present the accompanying additional returns ordered by the committee when visiting the stations.

A perusal of these papers will show that the amount of duty is in itself exceedingly heavy; and the experience of the committee will enable the members to realise the fact that the hours of labour are longer than those of mechanics, soldiers, policemen, sailors, or any other class of men.

In addition to this, it will be remembered that these hours are irregular, the men doing sometimes eight or 10 duties of one or two hours at a time, the whole being spread over a period of some 24 hours; thus involving a most serious amount of broken rest, and consequently making their duties much more laborious.

A precise calculation on the basis of these returns would lead to the conclusion that it would be advisable to relieve the men by making an addition of one man to every station all round; but, as there are now 50 stations open, this would involve an increase of 50 men; and I am of opinion that, by making a few changes in some of the outside districts, it will be quite possible to carry on the duties with an addition of 35.

In order to do this it would be necessary for the committee to reconsider the cases of any stations in which they have ordered only two men to be placed, and to allow me to put a third in each of these places, so that I may be enabled to call on them for help at all times.

If the views here set forth meet the approval of the committee, I should most respectfully recommend that the 35 men now temporarily employed be permanently enrolled, and I am quite confident that the result of such a step will be the means of removing all reasonable cause of complaint on the part of the men, and will at the same time be attended with most beneficial results to this department of the business of the Board.

In conclusion, I would most respectfully urge on the committee the advisability of dealing with this subject at the earliest possible moment, as the present state of uncertainty is likely to prove most injurious to the discipline and orderly management of the brigade.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
23 October 1868.

I HAVE to report that it is advisable at as early a date as possible to make some permanent arrangement concerning a head-quarter or central station for the whole fire brigade, the present one being badly situated and very imperfectly adapted for the purpose.

When the brigade was first established it was the property of private individuals, and its transactions were conducted on a small scale, and it was under these circumstances that Watling-street was selected as the head-quarters; but now that it has become a public institution, under the charge of the Metropolitan Board of Works, with a very much enlarged scale of operations, the site and capacity of the old head-quarters are found to be very ill-adapted to our requirements.

The present head-quarter station comprises four houses in Watling-street, numbered respectively 66, 67, 68, and 69, and it contains an engine-house, a stable, a watch-room, an office, and apartments for the chief officer and a few of the staff. It has, however, neither a workshop, a store, a drill-ground, a place for examining and testing engines, nor a reading and instruction room, all of which are essentially necessary to the proper discharge of our duties.

At present I am carrying on our repairs in an old warehouse in Upper Thames-street, the drills of the new men in the rough ground at Doctors' Commons, the testing of engines in the open streets in front of the stations before daylight in the morning, and the instructions partly in a loft at Lambeth Hill, partly in the open air, and partly in my own private apartments.

I should recommend that the whole of the Watling-street station be given up, with the exception

exception of the smallest house of the four, in which an ordinary station of moderate size could be kept up, and that a head-quarter station be established in some convenient central situation on the waterside, with all the accommodation which we have at present in Watling-street; and, in addition, a workshop, a store, an instruction-room, and a yard in which hose and ladder drill and testing of engines could be carried on.

I should most strongly recommend that, for the proper protection of London, the head-quarter station should be on the waterside, and that it should be provided with a floating pier, alongside which the principal fire-float should lie, so as to be ready at all times to move away within two or three minutes of receiving a call, instead of having to wait as at present at certain times of tide, nearly half-an-hour getting the men on board. The advantage of such an arrangement would be of the utmost moment in all cases of heavy waterside fires, and would undoubtedly reduce warehouse and wharf losses very considerably.

It would, of course, be a matter for the consideration of the committee to decide where such a site could be found; but as it is necessary in a report of this kind that I should make some general recommendation as to the position, I should name any part of the river-side between the Temple and Southwark Bridge on the north shore, or between Waterloo Bridge and Southwark Bridge on the south shore, care being taken that in the spot selected there should be not loss than four feet of water alongside the pier at low-water of spring tides.

I believe, from such information as I can obtain, that the value of the houses in Watling-street is so great that comparatively little expense would be incurred in carrying out this most important object; and I should recommend that the question be considered as soon as possible, partly because we must shortly give up the present workshops and drill-ground, in order to make way for the new street, but chiefly because the scheme of our organisation can never be considered by the Board to be complete, as long as we are without a suitable head-quarter station.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

Fire Brigade Committee.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
5 November 1868.

I HAVE to report that the present arrangement concerning rewards given to the men who have saved life from fire is not working satisfactorily, as there are many in all ranks of the brigade who would not put forward claims or accept rewards from any society, while at the same time they would be most anxious for some recognition of their services from their own employers.

This feeling on the part of the officers and men, if allowed to continue, will have the effect of leading all ranks to undervalue a distinction, which as a point of professional duty, they should especially covet, and I therefore beg to recommend, that some mode of recognition of good service be established in the brigade.

Some time since the sub-committee on this subject gave an opinion that rewards might be given to the men of the brigade in cases displaying great bravery and extra personal merit, but under the existing arrangement I see no probability of rewards being claimed by the most deserving.

I should therefore recommend, that a simple badge of merit be established which may be worn on the uniform, and that I be instructed in future to bring forward all cases of specially meritorious conduct in the discharge of duty at the next committee after they have occurred.

Such a recognition would include the services of all who distinguish themselves whether in saving life or property, and I am convinced that a prompt acknowledgment of exceptionally meritorious conduct, coming from their own employers, would prove most effectual to sustain the healthy spirit which at present exists among the firemen, and to encourage them to fresh exertions for the future.

In the event of this recommendation meeting the approval of the committee, I should beg to recommend, that the badge consist of either a small plain medal, or a stripe on the right arm, and that, as a general rule, no pecuniary reward be given.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

Fire Brigade Committee.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
19 November 1868.

I HAVE to report that much difficulty arises in the protection of the whole of the district about Knightsbridge, Belgravia, and Pimlico, owing to the positions of the several stations at Sloane-square, Brompton, Victoria-street, and Horseferry-road, and as those at Sloane-

Appendix, No. 2.

square and Horseferry-road respectively are quite unsuitable for our purposes, and scarcely fit for habitation, and we are paying heavy rents in both places, I recommend that they be removed as soon as possible, the former to the upper end of Sloane-street, or the neighbourhood of Knightsbridge, and the latter to the lower end of Lupus-street, or the neighbourhood of Chelsea Bridge.

I believe that this alteration in the distribution of the force can be effected without any extra expense, and there can be no doubt that it would be attended with most beneficial results to that part of the metropolis.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
3 December 1868.

I HAVE to report that it is most desirable to complete the equipment of the existing stations of the fire brigade with the following articles, namely:—

Forty-six small engines to be drawn and worked by hand; each with hose and other gear complete.

N.B.—There are at present 50 stations, and only four are provided with good engines of this kind.

Four tenders with reels, &c., complete. One for each district.

These articles form an essential part of the machinery and apparatus of an effective organisation for extinguishing fire in the metropolis, and were included in the original scheme on which the Fire Brigade Bill was framed by the Home Secretary in 1865, but they have not yet been purchased.

The prices of engines and gear are lower now than they were at that time, and consequently instead of paying 30 *l.* for the engine and 30 *l.* for the gear, the Board may reasonably expect to be able to purchase them complete for about 50 *l.* each, or the whole for about 2,300 *l.*

The tenders and reels complete will probably cost the amount named in the estimate, 250 *l.* each, or 1,000 *l.* for the four.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
3 December 1868.

I HAVE to report that the difficulties of obtaining a sufficient quantity of water, under proper command, and at convenient distances from premises on fire, have engaged my attention for a considerable time, and that I am now prepared to recommend the adoption of the following measure, which can be carried out for a comparitively small sum, and will prove of great assistance to us in obtaining supplies for the next few years, pending the settlement which, I presume, must shortly be made concerning the important question of water supply to the metropolis.

I should recommend that every turncock be supplied with a standpipe, which he could insert into a convenient plug immediately on his arrival, thus converting the present opening into a fairly effective hydrant, which would be under complete command, and could be used, according to circumstances, either to pour water on the fire direct, or to deliver it into a portable cistern opposite the endangered premises, from which it would be pumped up by the engines.

Such an arrangement, compared with that hitherto and still in use, offers many advantages, the principal of which would be a saving of waste of water, a saving of time in getting to work, a saving of hose, as one line would often suffice instead of two, a saving of labour to all hands employed, and a greatly increased promptitude in passing messages between the men at the branch and the men at the engines.

I have carefully considered the whole subject, and am convinced that this is the only way in which the difficulty can be obviated for the next few years at anything like moderate cost.

The importance of any measures which can be adopted for the purpose of saving time and labour, will be better understood when it is mentioned that the enormous number of watches which we keep up, in proportion to the number of men, leaves us very short-handed twice in every 24 hours; namely, from about seven to nine a.m., and about seven to nine p.m., at each of which periods some are going out and others not returned; and all the men of both reliefs are engaged in bringing out or putting back the escapes, and watch-

boxes,

boxes, and getting ready the other necessaries for either day or night duty. On the evening of the 1st instant 334 men were thus engaged, and on the evening of the 2nd, 278, and consequently the number of men available for fires during relief time was very small.

No complaint of any kind is made on the subject, but it is right that I should inform the committee of our exact position in the matter, and I trust that they may be pleased, from time to time, and particularly at present, to adopt such reasonable measures as they may approve for the purpose of reducing our labour, and at the same time rendering us more effective in the discharge of our duty.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
28 January 1869.

IN accordance with the instructions of the committee at their last meeting on the 12th instant, I have to report that the following is a list of the turncocks and assistant turncocks of the several water companies, and that the cost of the stand-pipes, at their present price, 3 *l.* 8 *s.* 6 *d.* each, would be 1,082 *l.* 6 *s.*:—

Name of Company.	Turncocks.	Assistant Turncocks.	Total.
Chelsea	8	11	19
East London	32	32	64
Grand Junction	12	3	15
Kent	9	7	16
Lambeth	17	16	33
New River	55	47	102
Southwark and Vauxhall	16	16	32
West Middlesex	26	9	35
TOTAL	175	141	316

I am of opinion that, for so large a number, the cost may be considerably reduced; but, even at the present price, the total amount cannot be thought heavy when the great advantage to be derived from the change is taken into consideration.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
11 February 1869.

THE architect having intimated to me that the new station at the Crystal Palace will be ready for occupation before the next meeting of the committee, I beg to recommend that I receive instructions as to the force of firemen and engines to be placed there.

I am not aware whether any arrangement has been entered into as yet with the Crystal Palace Company as to keeping up a watch in the building, and consequently I have prepared the following suggestions in two ways; one for the station watch alone, and the other for the station watch combined with that of the building:—

	FIRST RECOMMENDATION.	
No. of Engines, 2.	Men to keep up a station watch, and attend chimneys and fires in the district	3
	SECOND RECOMMENDATION.	
No. of Engines, 2.	Men to keep up a station watch of 1 man always on duty, and a watch in the building with 2 men always on duty, and also to attend all chimneys and fires	6

Appendix, No. 2.

The Board will receive the new engines, already ordered, in time to place them in the station when it opens, but there are no men who can be withdrawn from town for the duties, and I therefore beg to recommend that such number as the committee decide on be appointed at once, in order that I may commence their instruction; and as soon as they understand the business, I could place them on duty in town, and relieve a corresponding number of experienced men for the new duties.

I do not, at present, recommend the appointment of any additional officers for this work, nor do I think it will be necessary to do so at any future time, and consequently the expense will be reduced to the lowest possible amount, being, in fact, only the wages and clothing of men of the fourth, or lowest class.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

Summary of Duties of the Metropolitan Fire Brigade.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
16 March 1869.

The Metropolitan Fire Brigade has at present 89 men on duty by day, and 162 men by night.

Keeps in order 53 stations, with 114 engines, 98 escapes, and all the hose and other appliances.

Takes all escapes to the contractors for repairs, and brings them away again when completed.

Attends police courts to prove cases of chimneys on fire.

Gives immediate attention in all cases of alarm, whether of chimneys or fires, and takes charge of premises until they are cool, and all danger passed.

Does the whole of the overhaul and painting of engines, and a large proportion of the repairs.

Does the whole of the repairs of hose, and almost the whole of the repairs of other gear.

Does a large amount of repairs and work in the way of carpentering.

Instructs men on joining in every branch of their duties, and occasionally practises the new and old hands together.

Makes up and distributes the daily reports to 65 fire insurance offices.

Keeps occurrence books at each station.

Keeps records in duplicate showing all attendance at fires, with full particulars as to the number of men, &c. One of these records is for the Board, and the other is for the head-quarter station.

Keeps 53 cash books, with details of station disbursements, &c.

Keeps a general cash book, with details of other disbursements.

Keeps 49 horse contractors' books.

Furnishes all these accounts to the Board in duplicate.

Makes out weekly lists of wages, and attends at the Board's offices for the money.

Makes out monthly lists of the firemen, showing their ranks and numbers, the stations to which they are attached, and their special duties, if any.

Makes out, twice in every 24 hours, an exact account of how every man is employed, so that the responsible officers can see at a glance what men are available for fires.

Makes out monthly returns of the condition of the escapes, engines, and gear.

Makes out requisitions for all articles required.

Examines and certifies all quarterly and other accounts, and conducts all necessary correspondence.

Makes reports to the Fire Brigade Committee of the Metropolitan Board of Works once a fortnight, and is at all times prepared to furnish information concerning every matter connected with the extinguishing of fires in the metropolis.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

---

19 April 1869.

In compliance with the Order of the 8th ultimo, I have to make the following report concerning the expediency of employing contract men in outlying stations.

The best mode of taking precautions against the extension of fires is to station skilled fireman in well-known places, and to keep one or more always on duty, so that immediately on receipt of an alarm a sufficient amount of help would be in attendance; but it was obvious from the first that such an arrangement could not be carried out all over the metropolis with the limited funds provided.

It therefore became necessary to consider whether it would be possible to devise a mixed plan; and the result was, that it was proposed to establish in the central districts of the metropolis regular fire-engine stations, with skilled firemen always in attendance, and in the outlying districts to supply engines and appliances, making a contract with some local tradesman or mechanic to supply a suitable station, horses, and the constant attendance of two

two men on the premises, with such arrangements that the engine should always be ready to turn out and be on its way to a fire within five minutes of the receipt of a call.

The object proposed to be effected by this arrangement was to save the expense of

Rent, rates, and taxes of station,
Wages of men,
Horse hire,

and to compound with some local employer of labour to keep a few of his assistants always ready to give the necessary help.

Thus, for instance, a respectable blacksmith, plumber, or carpenter, with a staff of eight or ten men working on his premises, could, without either trouble or expense, provide a standing for an engine and gear in his workshop; his men would always be ready on the spot by day, and would be within reasonable distance by night; and the engine could be drawn by the same horses used for his ordinary work.

I am of opinion that in many parts of London such an arrangement could be satisfactorily made for a sum not exceeding 100 *l.* a year, and that in other parts it could be made for about 150 *l.* a year; but it becomes a very serious matter to hand over a building rented by or belonging to the Board to any person not officially connected with the Board or acting under their orders, and I cannot recommend the adoption of such a course.

I should, however, recommend that, in the event of establishing new stations in any of the outlying districts, the plan of making contracts with respectable local tradesmen be tried, and I have no doubt that the Board will find the results very economical, and on the whole sufficiently satisfactory.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

Fire Brigade Committee.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
14 February 1870.

In compliance with the order of the committee of the 18th ultimo, I have to report that in the event of the Board deciding to increase the number of fire-escapes, the first places which I should propose as stations would be the following, namely:—

Fulham-road, near St. Mark's College,
Kensington-road, near Prince Albert-road,
Kensington-road, near Russell-road,
Uxbridge-road, near Royal Crescent,
Sussex-road, Kensington-park,
Hampstead, at the Fire-engine Station,
Highgate, at the Fire-engine Station,
Farringdon-road, near the House of Correction,
Camden-road, near the Brecknock-road,
Old Ford-road, at the corner of Three Colt-street,
Cambridge Heath-road, near the Canal,
New Cross, near the South Eastern Railway Station,
Charlton, near the Railway Station,
Woolwich, at the Fire-engine Station,
Plumstead, near the Arsenal,
Blackheath, near the Railway Station,
Lee, near Lee-green,
Eltham, near the Church,
Lewisham, near the Church,
Sydenham, in the High-street,
Brixton, at the Fire-engine Station,
Streatham, near the Church,
Tooting, at the Fire-engine Station,
Putney, in the High-street,
Wandsworth, at the Fire-engine Station,
Battersea, near Battersea New Church.

The number of men necessary to work these 26 new stations would be 39, that is three men for two escapes.

The first cost would be about 100 *l.* each, or 2,600 *l.* for the whole, and the annual expense would be about 2,500 *l.*

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

Appendix, No. 2.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
18 December 1871.

I HAVE to report that I have been for some weeks in possession of the new station at Blackheath, but that owing to the dampness of the walls it has not been possible up to the present time to commence regular work there.

As, however, it is desirable that if possible the opening of this station should be recorded in the annual report, I recommend that I be authorised to employ three extra men, and to establish a duty there in the best way I can before the end of the year.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE MINUTES, 8th August 1871.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
6 January 1872.

"Chief officer to report fully to the committee at next meeting what he considers the reasonable requirements of the parish of Plumstead and the neighbourhood as regards protection from fire, having regard to the present population and number of houses, and probable increase of same; and at the same time report on the circumstances of any other districts which he considers to be insufficiently protected, stating what he thinks necessary to satisfy their fair requirements."

With reference to the subject of the above order, and in compliance with the order of the committee at their last meeting, I have to report that the following would be good positions for fire-engine stations if the committee should decide to establish any in addition to those now existing.

Place proposed for Fire-engine Stations.	Name and Distance of nearest Fire-engine Station to Place proposed.		
	Name.	Distance.	
		Miles.	*Yards.*
Shooters Hill, near the Herbert Hospital	Woolwich	1	880
Greenwich and Woolwich, Lower-road, near Charlton Railway Station	Woolwich	1	330
Albert Gate, Knightsbridge	Brompton	1	220
Uxbridge-road, near Shepherd's Bush Green	Hammersmith	1	—
Kensal New Town, near Police Station	Notting Hill	1	588
Corner of Tottenham Court-road	Regent-street	—	1,320
Caledonian-road, King's Cross	St. Pancras	1	—
Millwall, near the south end of East Ferry-road	Poplar	2	—
New Cross, at the junction of Queen's-road and Old Kent-road	Deptford	1	440
Sydenham High-street	Sydenham	1	440
Dulwich College	Brixton	1	440
Streatham, near Leigham Court Avenue	Tooting	1	1,100
Putney	Wandsworth	1	—
South Lambeth, near St. Michael's National School	Kennington	1	440

In addition to these, the hose reels at Plumstead, Eltham, and Penge respectively should have a practical fireman in charge of each, to look after and take them to fires.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
5 February 1872.

"Chief officer to report further as to the circumstances of the districts and population around each of the spots specified as suitable for stations in his report now submitted."

With reference to the subject of the above order, I have to report as follows, namely:—

Albert

Albert Gate, Knightsbridge.—This spot is at the corner of the Brompton and Kensington roads, close to Tattersalls. There is a large population, and there are many valuable buildings in the neighbourhood. The nearest station to this spot is at Trafalgar-square, Brompton, distant one mile and an eighth.

Caledonian-road, King's Cross.—This spot is close to the St. Pancras and King's Cross Railway Stations, distant one mile from our station in Pratt-street, King's-road, and about half a mile from the new station to be erected in Coppice-row. I think the committee have decided that the erection of the latter has removed the necessity for a station at Kings Cross.

Dulwich College.—This spot is about two miles from any of our stations, the nearest being those at Sydenham and Brixton. There are many valuable houses and public buildings, and a very large population within a radius of a mile, and a fire-engine station placed here would be available for the protection of Herne Hill and a part of Lower Norwood.

Greenwich and Woolwich Lower Road, near Charlton Railway Station.—This spot is on the road between our present Woolwich and Greenwich stations, and is about a mile and a quarter from the former.

The population of Charlton is upwards of 7,000, and the number of houses about 1,000.

There are several large manufactories on the river side and a few inland, and there is no fire-engine station in the parish.

Kensal New Town, near the Police Station.—This spot may be described in the same terms as the last. The population and number of houses are very considerable and are rapidly increasing. The distance from our Notting-hill station is a mile and a quarter.

Millwall, near the south east end of East Ferry-road.—This spot is two miles from our nearest station at Poplar, and about a mile and a half from the floating engine in Limehouse Reach.

The value of the docks and factories in the neighbourhood is very great.

New Cross at the junction of Queen's-road and Old Kent-road.—This spot is a mile and a quarter from our Deptford station, and is in a commanding position for several main roads. A fire-engine station placed here would be available for the protection of about 15,000 or 20,000 houses and a population of nearly 100,000 between it and the present stations at Deptford, Greenwich, Old Kent-road, and Camberwell respectively.

Putney.—This spot is in the midst of a large and increasing neighbourhood, and a fire-engine station placed here would be available for the protection of about 1,600 houses and a population of about 10,000 within the districts of Putney and Roehampton. The nearest stations now are those at Wandsworth distant a mile, and at Fulham, distant a mile and a half. There is no fire-engine station at present in the parish of Putney.

Shooters Hill, near the Herbert Hospital.—The spot here indicated is very suitable in all respects for a fire-engine station, being about half way between our Woolwich station and Eltham, and about a mile and a half from each.

The population may be estimated at about 4,000 or 5,000 in the immediate neighbourhood and about 50,000 within a radius of two miles, and there are a great number of private houses, and several very large and important public buildings, including the Herbert Hospital, the Horse Artillery Infirmary, the Royal Military Academy, and many others. A station placed here would be available for Shooters Hill, Woolwich, Plumstead, Eltham, and Kidbrook.

South Lambeth, near St. Michael's National School.—This spot is about a mile and a quarter from our stations at Kennington, Clapham, or Brixton. It is in the midst of a dense population, and a large amount of property.

Streatham, near Leigham Court Avenue.—This spot is a mile and five-eighths distant from our Tooting station; it is at the junction of several main roads, and is surrounded by large and important houses, and a considerable population. A fire-engine station placed here would be available for the protection of about 2,000 houses and a population of about 14,000 inhabitants between it and our present stations at Tooting, Clapham, Brixton, and the Crystal Palace respectively.

Sydenham High-street.—This spot is distant a mile and a quarter from our station at the Crystal Palace. A fire-engine station placed here would be available for the protection of about 8,000 houses and a population of about 50,000, within the districts of Upper and Lower Sydenham, Forest Hill, Penge, Anerly, and a large portion of East Dulwich.

Corner of the Tottenham Court-road.—This spot is at the corner of the Tottenham Court-road and Oxford-street. It is on the road between our Regent-street and Holborn stations and distant about three-quarters of a mile from each. The population, number of houses, and value of property in this neighbourhood are enormous.

Uxbridge-road, near Shepherd's Bush Green.—A large number of houses have sprung up in this district within the last few years, and many others are now in course of construction.

Appendix, No. 2.

I cannot ascertain the number of the population, but I have no doubt that at present it is very considerable, and that it is rapidly increasing. The distance to the spot indicated is one mile from our Hammersmith station, and the same from Notting-hill.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
15 April 1872.

WITH reference to the subject of a new chief station for the fire brigade in place of the present houses in Watling-street, Lambeth-hill, and Upper Thames-street, I have to report as follows:—

In October 1868 the matter was brought under the notice of the committee by the following report, namely:—

"23 October 1868.

"I HAVE to report that it is advisable at as early a date as possible to make some permanent arrangement concerning a head-quarter or central station for the whole fire brigade, the present one being badly situated, and very imperfectly adapted for the purpose.

"When the brigade was first established, it was the property of private individuals, and its transactions were conducted on a small scale, and it was under these circumstances that Watling-street was selected as the head-quarters; but, now that it has become a public institution under the charge of the Metropolitan Board of Works, with a very much enlarged scale of operations, the site and capacity of the old head-quarters are found to be very ill-adapted to our requirements.

"The present head-quarter station comprises four houses in Watling-street, numbered respectively 66, 67, 68, and 69, and it contains an engine-house, a stable, a watch-room, an office, and apartments for the chief officer and a few of the staff. It has, however, neither a workshop, a store, a drill-ground, a place for examining and testing engines, nor a reading and instruction room, all of which are essentially necessary to the proper discharge of our duties.

"At present I am carrying on our repairs in an old warehouse in Upper Thames-street, the drills of the new men in the rough ground at Doctors' Commons, the testing of engines in the open streets in front of the stations before daylight in the morning, and the instructions partly in a loft at Lambeth-hill, partly in the open air, and partly in my own private apartments.

"I should recommend that the whole of the Watling-street station be given up, with the exception of the smallest house of the four, in which an ordinary station of moderate size could be kept up, and that a head-quarter station be established in some convenient central situation on the waterside, with all the accommodation which we have at present in Watling-street, and in addition a workshop, a store, an instruction-room, and a yard in which hose and ladder-drill and testing of engines could be carried on.

"I should most strongly recommend, that for the proper protection of London, the head-quarter station should be on the waterside, and that it should be provided with a floating pier, alongside which the principal fire-float should lie, so as to be ready at all times to move away within two or three minutes of receiving a call, instead of having to wait as at present at certain times of tide nearly half-an-hour getting the men on board. The advantage of such an arrangement would be of the utmost moment in all cases of heavy waterside fires, and would undoubtedly reduce warehouse and wharf losses very considerably.

"It would of course be a matter for the consideration of the committee to decide where such a site could be found; but, as it is necessary in a report of this kind that I should make some general recommendation as to the position, I should name any part of the river-side between the Temple and Southwark Bridge on the north shore, or between Waterloo Bridge and Southwark Bridge on the south shore, care being taken that in the spot selected there should be not less than four feet of water alongside the pier at low-water of spring tides.

"I believe, from such information as I can obtain, that the value of the houses in Watling-street is so great, that comparatively little expense would be incurred in carrying out this most important object, and I should recommend that the question be considered as soon as possible, partly because we must shortly give up the present workshops and drill-ground in order to make way for the new street, but chiefly because the scheme of our organisation can never be considered by the Board to be complete, as long as we are without a suitable head-quarter station.

(signed) "*Eyre M. Shaw,*
"Chief Officer, Metropolitan Fire Brigade."

At that time no steps were taken, and since then we have moved the workshops and instruction-ground twice; first to Sise-lane, Bucklersbury, and afterwards to Lambeth-hill and Upper Thames-street, where they now are.

In the beginning of this year an intimation was given by one of the committee of the Board

Board that the site of the present workshops, &c., was required for another purpose, and the following reports were presented, namely:— Appendix, No. 2.

"23 January 1872.

"With reference to the subject of the workshops, I have to report that I estimate the actual work done during the past year at about 2,000 *l.*, and the inspection and testing of boilers and machinery at about 1,000 *l.*, making a total of not less than 3,000 *l.* for the year 1871.

"All the work done has been of the best kind, and I am of opinion that it would not have been done by engine builders nearly as well, or for anything like the amount I have named.

"I therefore most strongly recommend that the workshops be not discontinued, and that if opportunity occurs they be brought into the same building as that used for the principal station.

(signed) "*Eyre M. Shaw*,
"Chief Officer, Metropolitan Fire Brigade."

"13 February 1872.

"I have to report that the following is the accommodation at the building in Lambeth-hill, Upper Thames-street, and Boss-court, at present used as workshops and school of instruction, and that it is barely enough in ordinary times, and quite insufficient in cases of heavy pressure of business:—

"Basement - 56 × 31 feet, used as store-room for heavy gear.
14 × 9 feet, used as coal-cellar.

"Ground Floor - 56 × 31 feet, used as fitting and repairing shop.
40 × 16 feet, used as store-room.

"First Floor - 19 × 16 feet, used as paint shop.
54 × 16 feet, used as hose-room and hose-makers' shop.
41 × 31 feet, used as carpenters', engine fitters', and lamp-makers' shop, &c., &c.

"Second Floor - 56 × 31 feet, used for engine instruction for new men.

"Yard - 37 × 20 feet, covered in, used as blacksmiths' shop, &c.
40 × 16 feet, covered in, used as standing-place for engines, &c.
40 × 21 feet, open, used for testing, working, and washing engines, &c.
37 × 10 feet, used as gateway and entrance to premises.

"Open Space - 110 × 54 feet, on north-west side of workshops, used as standing-place for fire-escapes and instruction ground for ladders and escapes.

"Dwelling-house in Upper Thames-street, with rooms for two officers; one in charge of the workshops and the other in charge of the instruction class.

"Dwelling-house at the corner of Upper Thames-street and Boss-court, with watch-room, mess-room, and sleeping-rooms for 12 men.

(signed) "*Eyre M. Shaw*,
"Chief Officer, Metropolitan Fire Brigade."

Since that time the inventory and valuation of stock of the brigade has been completed, and I have reason to think that I under-estimated the value of the work done, which must have amounted to a total of about 4,000 *l.* for the year 1871.

I am of opinion that, in order to work the brigade to advantage, it is desirable to concentrate the central station, offices, workshops, and instruction yard, and to place the whole in some central position on the waterside, from which the business can be transacted more effectually than at present.

I would also suggest that the City is by no means the best centre for a force under the control of the Metropolitan Board, and obliged to go all over the metropolitan area; but if the Board wish to keep the centre within the City, I would suggest that it be established either in some part of New Victoria-street or between the Temple and Blackfriars Bridge. If it is decided to place the centre outside the bounds of the City, I would suggest, as the best place of all, a portion of the vacant ground on either side of Whitehall-place, which, I understand, is the property of the Board; or, if any difficulty should arise in this, I think an eligible site might be obtained on the south side of the river, between Westminster and Southwark Bridges.

I cannot doubt that increased efficiency and economy would result from such a change.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

Appendix, No. 2.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
13 May 1872.

IN compliance with the order of the committee at their last meeting, I have to report that fire-escapes are most urgently needed at the following places, namely :—

Sussex-road, Kensington Park.
Stoke Newington.
Old Ford-road, at the corner of Three Colt-street.
New Cross, near the South Eastern Railway Station.
Sydenham, in the High-street.
Stockwell, at the "Swan."

The number of men necessary to work these escapes would be nine.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
14 October 1872.

WITH reference to the subject referred to me, I have to report that I consider it advisable for the proper protection of the metropolis to bring up the fire brigade to the force indicated in the first scheme submitted by me to the Home Secretary on the 5th of December 1864, adding 10 per cent. for the increase of London since that time, and also a force of men sufficient to work 200 fire-escapes not provided for in the scheme then proposed.

The details of the scheme referred to were ordered by the Board to be printed on the 31st of March 1865.

If this proposal be adopted the number of firemen, at present the weakest point in the organisation, would be more than doubled, the number of engines would be nearly trebled, but the addition in these would consist altogether of very small manual engines; the number of fire-escapes would be doubled; and the number of fire-engine stations would be nearly trebled, but the addition would be made in the same way as for the engines, namely, by those of the smallest size.

The fire brigade would then have about the following numbers, namely,—

Firemen	931
Fire-engines	330
Fire-escapes	200
Fire-engine stations	169

These figures may at first sight appear large, but they can hardly be considered so, when it is remembered that the metropolis consists of more 3¼ millions of persons inhabiting upwards of 400,000 houses, spread over an area of 121 square miles; that the value of the property contained in it is estimated at about 14,000,000 *l.* sterling; and that the premiums paid on the insured portion, which is calculated at one-third of the whole, amount at the present moment to not less than about 700,000 *l.* a year, which sum is, of course, capable of a reduction in direct proportion to the increase of the protection afforded.

In conclusion, I would mention that up to the present time the reduction of losses by fire is somewhat in excess of the additional amount of protection afforded, and that there is among those practically engaged in the business every reason to believe that a four-fold increase of the existing brigade would be attended with direct benefit to all concerned.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
24 October 1872,

I HAVE considered the subject of the probable cost of the enlarged fire brigade recommended in my report of the 14th instant, and I am of opinion that the salaries and wages would amount to nearly 80,000 *l.* a year, and that all the other expenses, including horse hire, repairs and renewals of stock, fuel, hire of telegraphs, expenses at fires, rents, medical attendance, clothing, and incidentals would come to about 40,000 *l.* a year, making the total cost of the enlarged brigade about 120,000 *l.* a year, instead of 70,000 *l.* as at present.

I estimate

I estimate the first cost of the additional fire-engines, fire-escapes, and other appliances which would be required for the enlarged brigade, at a sum not exceeding 20,000 *l.*

The annual expenditure would be at the rate of 86 *l.* per million sterling of property, 6 *s.* per house, or 9 *d.* per head of the population, and I have no doubt whatever that it would be attended by a much more than corresponding saving in life and property.

Putting the subject into figures, I think it may reasonably be assumed that the following estimate of the present and proposed arrangements respectively will be found approximately correct.

The metropolis now pays directly in connection with fires about as follows:—

	£.
Cost of maintaining fire brigade - - - - - -	70,000
Premiums of insurance - - - - - - -	700,000
Total - - - £.	770,000

and indirectly the whole amount of losees by fire in uninsured premises.

Under the proposed enlarged brigade the expenses would be about as follows:—

	£.
Cost of maintaining fire brigade - - - - - -	120,000
Premiums of insurance - - - - - - -	400,000
Total - - £.	520,000

This would make a direct saving of about 250,000 *l.* a year, and the amount of indirect payments would be reduced in even greater proportion.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

Fire Brigade Committee.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
20 November 1873.

As the new Battersea station will be ready for occupation within the next three or four months, I beg leave to recommend that arrangements be shortly made for providing the necessary men, engines, and gear for it.

I presume it will be the wish of the committee to place in this station one 6-inch manual engine, one curricle engine, and perhaps one fire-escape, and, if so, I should recommend that three men be added for the engines, and one for the escape, making an addition of four men to the brigade.

It would also be necessary to purchase the following additional appliances, namely:—

1 6-inch manual.
1 curricle.
1 fire-escape.
30 lengths of 1½-inch hose.
4 manual suction pipes.
1 curricle suction pipe.
2 suction strainers.
6 short lengths of scaling ladder.

The remaining articles, I think, we can manage to supply from our store.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

Fire Brigade Committee.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
11 July 1874.

I have to report that I have been for some time considering whether it would be possible to devise some means for reducing the very heavy cost of the coal and coke consumed in keeping up steam constantly in the two largest fire-floats, and I have come to the conclusion that some considerable saving might be effected without incurring any very serious risk to the water-side property of the metropolis.

I find that, during the year 1873, the fuel of the B Float cost nearly 800 *l.*, and of the D Float nearly 600 *l.* And these are the principal items in which I think a saving might

Appendix, No. 2.

possibly be effected. In the wear and tear, however, of the boilers and machinery, it may be expected that a considerable sum may be saved also.

Before proceeding further, I think it right to state that these two floats, although not quite perfect in detail, are the most powerful moveable fire-engines in the world, and that they are, in my opinion, absolutely necessary for the protection of the vast wealth of the river side of the metropolis. Any remarks, therefore, or suggestions which I make in this report are not intended in any way to disparage the undoubted efficacy of these two vessels for the purposes for which they are used.

What I should propose in the interests of economy would be to provide the following appliances, namely, say, 12 fire-engines, in almost all respects the same as those hitherto used on land, but without the carriage, wheels, springs, &c., &c., and merely fixed on a strong, solid frame, with small rollers underneath; in short, mounted on a platform in such a way as to resemble what is commonly known as a trolly; six rafts or barges of about the following dimensions, namely, length, 45 feet; width, 16 feet; depth, 3 feet, and with a draught of water of from 6 to 9 inches; and four small steam launches, capable of towing the rafts quickly to any places at which their services might be required.

These rafts might be stationed at various points along the river-side, and they would be available for use during the early stages of fires, before the arrival of the larger vessels.

The fuel might be laid in the furnaces of the B and D Floats all in complete readiness for lighting up in case of those vessels being required, but it would not be necessary to keep the fires always lighted and steam up, as hitherto. The fires, however, would be kept constantly lighted in the four small tugs, and the fuel for those fires would be the only constant expense. The difference in cost between the fuel used for these four small vessels, and that at present consumed in keeping steam constantly up in the two large floats, would represent the direct saving which I propose to effect by the scheme which I now submit. There would also be a very considerable indirect saving in the wear and tear of the boilers and machinery of the large vessels, which is generally very heavy, and is costing the Board for the years 1873 and 1874 not less than 1,300 *l.* or 1,400 *l.*

I estimate that the expense of keeping up fires in the four small tug-boats would not exceed 160 *l.* a year, so that on this item alone there would be a saving of more than 1,200 *l.* a year, and it is not improbable that a corresponding reduction might be effected in the items of wear and tear.

The cost of providing the appliances recommended would be about as follows, namely:—

	£.
12 fire-engines, at 400 *l.* - - - -	4,800
6 rafts, at 100 *l.* - - - - -	600
4 tug-boats, at 650 *l.* - - - -	2,600
TOTAL - - - £.	8,000

which, at 5 per cent. interest, would represent an expenditure of 400 *l.* a year.

Arrangements could be made in the two large vessels to get up steam within 40 minutes of the time of receiving a call, and, in the meanwhile, the engines on the rafts would be got to work on a fire so as to keep it in check; and I have no doubt that in some cases they might even succeed in extinguishing it before the arrival of the large engines.

The present floating engines are, as I have said before, the best of their kind, but their working expenses are so enormous and so continually increasing that, in the interests of economy, I have prepared this scheme, which I beg leave to recommend to the favourable notice of the committee.

(signed) *Eyre M. Shaw,*
Chief Officer Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London.
26 July 1875.

I VENTURE again to call the attention of the committee to the position of the present chief station of the brigade, and the very limited accommodation which it affords for the constantly increasing work which has to be transacted in it.

My report, of the 15th of April 1872, embodies the principal points connected with the subject, but as provision is now being made for workshops, the following would be about the accommodation required, namely—

Chief officer's dwelling-house, to consist of about 20 rooms, including hall, kitchen, and cellars.
Officer in charge of station, four rooms.
Three second-class engineers, three rooms each.
Six married men, two rooms each.
Ten single men, mess-room, 16 × 16 feet, four bedrooms, kitchen, and bath-room.
Officer in charge of drill class, three rooms.
Two assistant drill instructors, two rooms each.

Ten

Ten single men (drill class), mess-room, 16 × 16 feet, four bedrooms, kitchen, and bath-room.
Engine-house, to stand six machines of various kinds, 46 × 50 feet.
Office, 20 × 20 feet.
Watch-room, 20 × 20 feet.
Room for educational purposes, 30 × 20 feet.
Stables to stand seven horses, and accommodation for harness, forage, and two married coachmen.
Tower on roof for look out.
Room for drying and cleaning hose.
Coal cellars, wash-houses, and water-closets.
Store-room, 10 × 10 feet.
Yard for engine and escape instruction, 100 × 100 feet.
Officers' assembling room.
Waiting room for persons calling on business.

There are at present no less than three officers, three firemen, and one coachman living out of the station, and the total amount paid for their rent is 2*l.* 13*s.* a week, or 137*l.* 16*s.* a year; in addition to which the inconvenience of having them living at distances of, in some cases, a mile and upwards from the station, is at all times a very serious difficulty, and occasionally a positive source of weakness.

I therefore beg leave to recommend that the subject of establishing a head quarter or central station be considered at as early a date as convenient.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
20 December 1875.

I HAVE to report that I think it will be advisable to obtain by the middle of next year eight new hose vans for the use of the brigade.

I estimate the cost at about 50*l.* each.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
7 February 1876.

I HAVE to report that the accommodation required for the instruction class and the fire-escapes is as follows:—

For the Instruction Class.—Three rooms for an engineer, the principal instructor; four rooms for two firemen, the assistant instructors; four bed-rooms, one kitchen, one mess-room, and one bath-room, for 12 men under instruction; one engine-room; one watch-room; one store for steam-coal; a space of not less than 100 × 100 feet for laying out hose, working engines, ladders, &c., and some walls, not less than 40 feet in height, with windows, ledges, and parapets.

For the Fire-escapes.—Three rooms for the man in charge; four rooms for two assistants; one store-room for gear; standing room for 20 fire-escapes, allowing for each a space of 40 × 7½ feet, or 300 square feet, making a total of 6,000 square feet for the fire-escapes.

A line of telegraph would also be required for each of these places.

It would be a very great advantage to the brigade to have the instruction class, standing for escapes, and workshops combined; and the best place for them, as reported on the 26th of July 1875, would be in the immediate proximity of the head-quarter station, and forming part of it.

This would effect a very considerable saving on the above, as the assistants would not be required for the fire-escapes; the two lines of telegraph would not be necessary, and the space required for the two places combined might be reduced by nearly one-fourth, as with plenty of help always on the spot the escapes might be packed close, and occasionally, during the drills, might be allowed to stand on end.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

Appendix, No. 2.

FIRE BRIGADE COMMITTEE.

Metropolitan Fire Brigade,
Chief Station, Watling-street, London,
30 March 1876.

HAVING heard that the Board is shortly about to abandon the premises at Grand Junction Wharf, I beg leave to call attention to my report of the 7th ultimo, and to remind the committee that I am without instructions as to what I am to do about the fire-escapes and drill class when we leave.

The only places I can think of for the escapes are the Thames Embankment and the open space outside the Board's offices, at the Spring Gardens end of St. James's Park; and I do not think the police authorities would allow them to remain in either of these places more than a few hours.

I know of no place in which we can carry on our instruction until the Board puts up a building for the purpose.

Under these circumstances I would ask the committee to give me instructions as soon as possible as to what I am to do.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

Appendix, No. 3.

Metropolitan Board of Works.

RETURN showing the Cases of Men who have Broken down in the Service of the Metropolitan Fire Brigade, with the Amounts Awarded them by the Metropolitan Board of Works; also, a Return of the Men who have displayed great Merit in Saving Life from Fire, and whose Cases have been specially laid before the Metropolitan Board by the Chief Officer, and of the Gratuities Granted to them by the Board.

— 1. —

CASES of Men who have Broken down in the Service of the Metropolitan Fire Brigade, with the Amounts Awarded to them by the Metropolitan Board of Works.

DEATHS.

—	Rank.	Name.	Cause of Death.	Length of Service.	Amount Awarded to Family.	REMARKS.
	KILLED:			Y. M.	£. s. d.	
Sept. 1868	Fourth class fireman	John Taylor		0 1	- -	This young man fell from a fire escape whilst learning the drill. He left no one dependent upon him.
Oct. 1871	Second class fireman	Joseph A. Ford		4 7	52 *l.* (1 *l.* a week for one year).	Ford's widow would have received a permanent annuity or pension from the Board, but within a few days after the accident a sum of 1,775 *l.* was subscribed for her by the public; 1,500 *l.* of which was invested for the benefit of her and her children, and the balance of 275 *l.* handed to her.
Nov. 1872	Third class fireman	Stanley M. Guernsey		4 1	- -	Unmarried.
	DIED:					
April 1866	Sub-engineer	George Legg		17 3	22 9 6	
Aug. „	First class fireman	Thomas Taylor	Liver complaint	6 5	- -	No widow or children.
April 1868	Sub-engineer	Charles Little	Phthisis	7 6	- -	- - ditto.
June 1869	- ditto	George Wall	Heart disease	9 0	10 - -	
Oct. „	Engineer	John Flaxmore	Rheumatic fever	19 0	24 16 -	
Dec. „	Fourth class fireman	Thomas W. Bishop		1 2	- -	Unmarried.
Sept. 1870	Engineer	Edmond J. Lee	Pericarditis	18 6	25 - -	
Jan. 1872	First class fireman	Thomas Sharp	Heart disease	17 8	20 - -	
Jan. 1875	- - ditto	Jacob Marchant	Apoplexy	9 0	20 - -	
Jan. „	- - ditto	William Gill	Bronchitis	7 6	20 - -	
July „	First class engineer	Paul Girard	Dropsy	42 6	- -	A widower, with no children dependent upon him.
Sept. „	Second class fireman	John P. Hutchings	Heart disease	8 2	20 - -	
Nov. „	First class engineer	William H. Maidman	- ditto	39 0	40 - -	

Note.—In addition to the allowances above stated, 5 *l.* was in each case allowed, under a standing order of the Board, for funeral expenses.

DISCHARGED ON ACCOUNT OF INFIRMITY.

—		Rank.	Name.	Nature of Infirmity.	Length of Service. Y.	M.	Pension.	Gratuity. £.	s.	d.	REMARKS.
July	1868	First class fireman -	William Perdue -	- - - -	15	0	- -	20	–	–	This man was reduced from the rank of an officer for intoxication whilst on duty, and on his resignation 20 *l.* was granted to him on the recommendation of Captain Shaw.
Jan.	1869	- - ditto - -	Joseph Perkins -	Rheumatic gout -	30	10	14*s.* a week.	—			
Jan.	,,	- - ditto - -	John Affleck -	Catarrh - - -	3	10	- -	3	3	–	Two weeks' pay.
Jan.	,,	Second class fireman	John Gibbs - -	Consumption - -	3	0	- -	10	–	–	
Jan.	,,	Third class fireman -	Samuel Grapes -	Hæmorrhage of lungs	1	7	- -	2	9	–	Two weeks' pay.
April	,,	Fourth class fireman	Robert A. Humphries	Affection of the eyes	0	6	- -	2	2	–	Two weeks' pay.
May	,,	Third class fireman -	Charles Francis -	Consumption - -	1	6	- -	4	18	–	Four weeks' pay.
July	,,	Fourth class fireman	John Hill - -	- ditto - - -	0	10	- -	4	4	–	Four weeks' pay.
July	,,	- - ditto - -	Thomas McGregor	Rheumatic gonorrhœa	0	2	- -	2	2	–	Two weeks' pay.
July	,,	Third class fireman	George Ray -	Amputation of leg -	2	8	- -	10	–	–	The injury which necessitated the amputation was not caused by his duty. He was riding through the streets on horseback, which is no part of a fireman's duty.
July	,,	Fourth class fireman	Charles Dunlop -	Epileptic fits - -	1	0	- -	2	2	–	Two weeks' pay.
Oct.	,,	- - ditto - -	Thomas Roberts -	Lung disease - -	1	2	- -	4	4	–	Four weeks' pay.
Oct.	,,	- - ditto - -	Edmund Meek -	Rheumatism - -	0	6	- -	4	4	–	Four weeks' pay.
Nov.	,,	Engineer - -	Thomas Smart -	Chronic bronchitis -	3	4	- -	10	–	–	Smart was 17 years in the service of the parochial authorities of Greenwich before he was taken over by the Board, and it was thought right that the Greenwich authorities should compensate him in respect of the time he passed in their service.
Nov.	,,	First class fireman -	William H. Daman	Lung disease - -	6	4	- -	20	–	–	
Nov.	,,	- - ditto - -	George Low -	Mentally unfit -	2	5	- -	16	10	–	This man was 20 years in the service of the Royal Society for the Protection of Life from Fire, and received compensation from the society on leaving its service for that of the Board.
Dec.	,,	Second class fireman	James Cook -	Rheumatism - -	2	10	- -	10	–	–	
April	1870	First class fireman -	Stephen Martin -	Bronchitis - -	30	2	15*s.* a week.	—			
July	,,	Third class fireman -	Willam Mellett -	Consumption - -	3	0	- -	10	–	–	
Nov.	,,	Fourth class fireman	Michael Coughlin	Lung disease - -	5	0	- -	4	4	–	Four weeks' pay.
Dec.	,,	Third class fireman -	Benjamin Howell -	Consumption - -	3	6	- -	10	–	–	
Feb.	1871	Fourth class fireman	John H. Vivian -	Congestion of the lungs.	4	0	- -	2	2	–	Two weeks' pay.
Mar.	,,	Second class fireman	George Clifford -	Bronchitis and pleurisy.	5	0	- -	10	–	–	
May	,,	Third class fireman -	James Bacon -	Syphilitic ulcerations	3	10	- -	4	18	–	Four weeks' pay.
Jan.	1872	First class fireman -	John Vincent -	Inflammation of knee	8	5	- -	20	–	–	
Feb.	,,	Second class fireman	Thomas Chard -	Consumption - -	5	6	- -	15	–	–	
Nov.	,,	Fourth class fireman	Charles Attwood -	Paralysis - -	0	11	- -	4	4	–	Four weeks' pay.
Feb.	1873	Third class fireman -	Robert Bailey -	Affection of the heart	5	2	- -	10	–	–	
June	,,	Engineer - -	Charles Radford -	Consumption - -	17	1	16*s.* a week.	-		-	Radford having died within a year after the pension was granted to him, 20 *l.* was given to his widow.
June	,	Third class fireman -	James Herbert -	Affection of the chest	5	6	- -	12	–	–	
Jan.	1874	Second class fireman	George Kidson -	Injury to leg - -	6	6	- -	10	–	–	
Jan.	,,	First class fireman -	Henry Bennett -	Disease of the brain -	8	0	- -	28	–	–	
Jan.	,,	- - ditto - -	Henry Day - -	Disease of the chest	10	6	- -	20	–	–	
Jan.	,,	Engineer - -	Henry J. Knight -	- - - -	14	0	- -	10	–	–	This man tried to commit suicide whilst in a state of mental weakness, brought about by excessive drinking, and had to be discharged.
June	1875	Fourth class fireman	Thomas Wright -	Injury to leg - -	1	1	- -	10	–	–	
Nov.	,,	Second class fireman	Samuel Hawkins -	- ditto - - -	8	0	- -	25	–	–	
Mar.	1876	Fourth class fireman	Henry Nisbett -	Injuries through falling from roof of house.	1	4	10*s.* a week.	—			

— 2.—

RETURN of MEN who have displayed great Merit in SAVING LIFE from FIRE, and whose Cases have been specially laid before the Metropolitan Board by the Chief Officer, and of the GRATUITIES granted to them by the Board.

Date of Fire.	Place where Fire occurred.	Number of Lives Saved.	Names of Men who have Saved Lives.	
			Rank.	Name.
14 Oct. 1867	35, Gun-street, Spitalfields	1	Fourth class fireman	Robert Bailey.
29 Nov. „	23, Young-street, Kensington	8	Third class fireman	David Parsons.
8 Dec. „	7, White Horse-street, Stepney	2	First class fireman	George Hardway.
22 Jan. 1868	15, Chapel-street, Edgware-road	1	Fourth class fireman	Benjamin Howell.
14 Feb. „	110, London Wall	2	First class fireman	Robert Steer.
22 April „	104, North-street, Whitechapel-road	1	Fourth class fireman	John Brownridge.
6 May „	71 and 73, Cloudesley-road, Barnsbury	9	First class fireman	James Ward.
6 May „	18, Drury-court, Drury-lane	3	Third class fireman	Abraham King,
8 June „	1, High-street, Bow	7	- ditto - ditto	Robert Konway.
5 July „	154, Tooley-street	6	Engineer	Samuel Helps.
			Third class fireman	Francis W. Boon.
28 Aug. „	81, Seymour-street, Euston-road	2	- ditto - ditto	Joseph Hoy.
7 Sept. „	8, Liverpool-street, Bishopsgate-street	7	First class fireman	Robert Steer.
26 Sept. „	12, Castle-street, Leicester-square	6	Second class fireman	Richard Mockett.
			- ditto - ditto	Thomas Hatton.
			Third class fireman	Robert Offord.
7 Nov. „	153, St. George's-street, East	9	Fourth class fireman	Frederick Marsh.
17 Dec. „	91, Whitechapel High-street	1	First class fireman	Samuel J. Wood.
13 Jan. 1869	88, Shadwell High-street	3	Fourth class fireman	John Tippins.
25 Jan. „	9, Bloomsbury-street	2	- ditto - ditto	James Shaw.
16 Mar. „	52, Philpot-street, Commercial-road	1	Third class fireman	Daniel Perryman.
			Fourth class fireman	Frederick Marsh
20 Mar. „	177, Bishopsgate-street	5	Second class fireman	George Palmer, jun.
13 May „	32, St. John's-road, Hoxton	2	Third class fireman	Thomas Goodwin.
9 June „	172, Barnsbury-road	3	- ditto - ditto	James F. Hotson.
24 June „	8, Charlotte-street, Tottenham-court-road	2	Fourth class fireman	Walter D. Bear.
27 July „	4, Hackney-road	1	- ditto - ditto	Charles J. Mathews.
19 Aug. „	6, Church-street, Greenwich	3	Second class fireman	Philip Kench.
10 Oct. „	44, Newington Butts	1	Sub-engineer	Henry Ward.
			First class fireman	Thomas Sharp.
14 Oct. „	1, George-terrace, Lewisham-road	1	Third class fireman	Francis W. Boon.
26 Oct. „	5, Church-street, Kensington	7	- ditto ditto	George H. Williams.
1 Jan. 1870	8, Telegraph-street, Moorgate-street	3	Sub-engineer	John W. Hale.
			- ditto	William Penfold.
			Third class fireman	Robert Hutchings.
			Fourth class fireman	Frederick Lawrence.
3 Jan. „	4, Upper East Smithfield	3	- ditto - ditto	Henry Goddard.
24 Jan. „	142, Oxford-street	2	Second class fireman	William Hawkins.
12 Feb. „	45, High-street, Whitechapel	9	- ditto - ditto	William Burnett.
			Third class fireman	James Rogers.
18 Feb. „	95, St. George's-street, East	5	- ditto - ditto	William Mellett.
			Fourth class fireman	William J. Ludlow.
17 Mar. „	112, London-road, Southwark	2	- ditto - ditto	Edward Fisher.
17 Mar. „	85, Long Acre	1	- ditto - ditto	George Pettman.
4 April „	3, Coleman-street, Woolwich	3	Sub-engineer	Thomas Wingfield.
			Third class fireman	Francis W. Boon.
27 Mar. „	1½, Grafton-street, Soho	6	Sub-engineer	James G. Sergant.
			Fourth class fireman	George Stubbings.
5 April „	37, Gloucester-place, Hyde Park	1	- ditto - ditto	Charles Wright.
7 May „	248, Wapping High-street	5	- ditto - ditto	Charles W. Stanley.
13 May „	121, St. George's-street, East	5	- ditto - ditto	John Tollafield.
16 May „	27, Newington Causeway	4	- ditto - ditto	Andrew R. McAndrews.
			- ditto - ditto	Thomas G. Ashford.
31 May „	9, Great Swan Alley, Moorgate-street	3	- ditto - ditto	Nathaniel Pooley.
6 June „	14, Emmett-street, Poplar	1	Sub-engineer	Herbert Williams.
9 June „	38, Aldgate High-street	4	Third class fireman	Edwin T. Charles.
			- ditto - ditto	James Rogers.
25 June „	150, Lower Kennington-lane	3	Fourth class fireman	John Treson.
12 July „	South Molton-lane, Grosvenor-square	3	Third class fireman	James Sander.
22 July „	85, Whitechapel High-street	2	Fourth class fireman	James Lewis.
15 Aug. „	6, Victoria-place, West India Road	2	Second class fireman	George W. Gamble.
5 Oct. „	117, Bishopsgate-street	3	Third class fireman	William Chatterton.
8 Oct. „	71, Camberwell-road	1	Fourth class fireman	James Bacon, jun.
25 Oct. „	339, Edgware-road	2	Third class fireman	John J. Mitchell.
			Fourth class fireman	Frederick Smith.
19 Nov. „	40, Edgware-road	2	- ditto - ditto	Edmund J. Moorby.
6 Dec. „	44, Borough High-street	1	Second class fireman	Edward Garner.
9 Dec. „	80, Waterloo-road	3	Fourth class fireman	Joseph Dowman.

Date of Fire.	Place where Fire occurred.	Number of Lives Saved.	Names of Men who have Saved Lives.	
			Rank.	Name.
11 Dec. 1870	46, Walford-road, Hornsey - - -	3	Sub-engineer - -	Edward Bailey.
			Fourth class fireman -	William Morrison.
16 Dec. ,,	65, High Holborn - - - - -	2	Third class fireman -	James Cotter.
7 Jan. 1871	26, Old-street road, Shoreditch - - -	7	Fourth class fireman -	Nathaniel Pooley.
20 Jan. ,,	208½, Long-lane, Bermondsey - - -	3	- ditto - ditto -	Henry Smith.
6 March ,,	1, Chapel-street, Edgware-road - - -	4	Third class fireman -	John J. Mitchell.
8 March ,,	16, Cropley-street, New North-road - -	2	Second class fireman -	Charles B. Beeton.
28 March ,,	56*a*, Houndsditch, City - - - -	7	Third class fireman -	William Chatterton.
5 April ,,	15, Boot-street, Old-street-road - - -	2	Fourth class fireman -	Nathaniel Pooley.
17 April ,,	414, Kennington-road - - - -	4	- ditto - ditto -	William Humphry.
17 Aug. ,,	19, Leather-lane - - - - -	7	- ditto - ditto -	William Padbury.
23 Aug. ,,	1, Whitechapel-road - - - - -	5	- ditto - ditto -	Benjamin Collins.
30 Aug. ,,	119, Drury-lane - - - - -	1	- ditto - ditto -	Frederick Blake.
7 Oct. ,,	98, Gray's-inn-road - - - - -	5	Second class fireman -	Joseph A. Ford.
		1	Fourth class fireman -	Charles Attwood.
1 Nov. ,,	4, Albion-place, Hyde Park-square - -	3	Third class fireman -	Archibald Brown.
7 Nov. ,,	95, St. George's-street, East - - -	2	First class fireman -	George Palmer, jun.
15 Nov. ,,	1, White Lion-street, Pentonville - -	3	Second class fireman -	John T. Kelly.
2 Dec. ,,	2, De Beauvoir-square, De Beauvoir Town -	4	Sub-engineer - -	Henry Harwood.
			Second class fireman -	Edward Smith.
8 Dec. ,,	14 to 16, Arundel-street, Haymarket - -	1	Fourth class fireman -	Denis M'Carthy.
31 Dec. ,,	56, Brompton-road - - - - -	2	Third class fireman -	John Carey.
4 Feb. 1872	40, Cable-street, St. George's East - -	2	Sub engineer - -	Frederick Smart.
8 Feb. ,,	33, May-street, Poplar - - - -	1	- ditto - - -	Herbert Williams.
10 Feb. ,,	4, Great Ormond-street - - - -	1	Fourth class fireman -	James Cooper.
5 Mar. ,,	105, Houndsditch - - - - -	8	Third class fireman -	William Chatterton.
4 May ,,	10, Chiswell-street, Finsbury - - -	4	Sub-engineer - -	George Bull.
			Third class fireman -	Francis Welton.
10 May ,,	62, White Lion-street, Pentonville - -	1	- ditto - ditto -	John Morgan.
19 May ,,	26, Princes-street, Drury-lane - - -	6	Sub-engineer - -	John Howard.
			Fourth class fireman -	John Abraham.
28 May ,,	14, Star Corner, Bermondsey - - -	5	Third class fireman -	Alfred Devonshire.
23 June ,,	94, Upper Whitecross-street - - -	3	Sub-engineer - -	George Bull.
			Third class fireman -	Francis Welton.
			- ditto - ditto -	James Hotson.
28 Sept. ,,	60, Exmouth-street, Clerkenwell - -	1	Third class fireman -	Richard Hathaway.
26 Oct. ,,	65, Moreton-terrace, Kentish Town - -	5	- ditto - ditto -	Thomas T. Elsey.
2 Nov. ,,	142, Fenchurch-street, City - - -	2	- ditto - ditto -	William Chatterton.
			Fourth class fireman -	William Rogerson.
3 Nov. ,,	99, Westbourne-street, Pimlico - - -	10	Second class fireman -	Squire Lodge.
3 Nov. ,,	247, Ebury-street, Pimlico - - - -	7	- ditto - ditto -	Squire Lodge.
6 Nov. ,,	30, Westbourne-street, Pimlico - - -	5	- ditto - ditto -	Squire Lodge.
23 Nov. ,,	122, Albany-street, Regent's Park - -	6	Third class fireman -	William Wheeler.
16 Feb. 1873	6, Deptford Bridge, Deptford - - -	3	Fourth class fireman -	John R. Banberry.
24 Feb. ,,	7, Bermondsey-street, Bermondsey - -	5	Second class fireman -	Robert H. Phillips.
			Fourth class fireman -	Frederick S. Clark.
11 April ,,	48, Blackfriars-road - - - - -	3	- ditto - ditto -	James Weller.
11 May ,,	100, Whitechapel-road - - - -	2	Second class fireman -	Adam Blair.
4 July ,,	8, Hampstead-road - - - - -	3	Third class fireman -	William Wheeler.
12 Sept. ,,	25, Welbeck-street, Cavendish-square - -	1	- ditto - ditto -	Joseph Buckland.
12 Oct. ,,	347, Cambridge-road - - - -	6	Fourth class fireman -	Thomas Tatnell.
19 Oct. ,,	40, Great Windmill-street, Haymarket -	2	- ditto - ditto -	William Murphy.
25 Oct. ,,	20, Whitechapel-road - - - -	4	Third class fireman -	Robert Crouch.
21 Nov. ,,	17, Clare-court, Drury-lane - - -	1	- ditto - ditto -	William Arnold.
12 June 1874	111, Union-street, Borough - - -	4	Fourth class fireman -	William Gowen.
15 June ,,	119, Fulham-road - - - - -	2	- ditto - ditto -	James Barry.
6 July ,,	109, Cannon-street - - - - -	8	Third class fireman -	Frederick Steventon.
8 Oct. ,,	102, Old-street, St. Luke's - - - -	17	- ditto - ditto -	William Ludlow.
23 Oct. ,,	105, Mile End-road - - - - -	9	- ditto - ditto -	Thomas J. Elsey.
31 Oct. ,,	15 and 16, Princes-street, Spitalfields - -	2	- ditto - ditto -	Nicholas Jones.
3 Nov. ,,	4, Commercial-street, Whitechapel - -	11	- ditto - ditto -	James Wayling.
19 Nov. ,,	66, Bunhill-road, St. Luke's - - -	6	Fourth class fireman -	Stephen Holden.
30 Nov. ,,	68, Leadenhall-street - - - - -	4	- ditto - ditto -	John H. Dickens.
25 Dec. ,,	282, Poplar High-street - - - -	4	- ditto - ditto -	T. O'Connor.
27 Jan. 1875	12, Salisbury-street, Strand - - -	2	Third class fireman -	Thomas Gibbs.
5 Feb. ,,	54, City-road - - - - - -	2	- ditto - ditto -	Joseph R. Sewell.

No gratuities were given by the Board to any of these men, for the reasons stated in the following extracts from a Report made by Captain Shaw to the Fire Brigade Committee of the Board on the 26th of May 1868:—

"It will be in the recollection of the Committee, that on the 5th of October 1866, it was resolved, 'That in the opinion of the Board it is inexpedient to allow the men of the Fire Brigade to receive gratuities for services rendered in the discharge of their duty;' and, after carefully examining the whole of the applications now brought forward, I can see no reason to recommend the Board to alter the resolution referred to."

"I ought to mention that the Fire Escape duty, though of a most harassing description when considered with reference to the duration of the watches, and the particular time over which they extend, namely, from 7 p.m. to 7 a.m., is not in any way to be compared as regards risk, labour, or skill, with the ordinary Fire duty, and that it will be most important to decide whether the less difficult duty should be allowed to constitute a claim from which the other is excluded."

By Order,

Spring Gardens, 3 May 1876. *J. Wakefield*, Clerk of the Board.

Appendix, No. 4.

PAPER handed in by Captain *Shaw*.

METROPOLITAN FIRE BRIGADE.

Appendix No. 4.

SUMMARY of the Number of FIRES in each HOUR for TEN YEARS.

HOUR.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	TOTAL.
A.M. 1st	95	79	99	91	118	114	81	89	79	75	920
2nd	80	62	85	84	114	108	70	89	71	66	829
3rd	66	69	78	84	105	112	58	56	64	48	740
4th	57	50	67	57	76	87	51	52	42	46	585
5th	33	33	44	49	61	54	32	37	41	33	417
6th	20	25	22	31	36	26	29	28	18	27	262
7th	36	17	29	35	32	35	27	22	33	39	305
8th	28	23	30	26	38	31	37	28	34	28	303
9th	25	29	22	31	31	42	27	33	30	32	302
10th	21	27	35	37	36	33	42	32	31	39	333
11th	21	32	48	47	45	43	35	38	38	48	395
12th	33	37	45	41	49	42	47	40	52	41	427
P.M. 1st	45	50	69	43	55	47	50	42	57	53	511
2nd	37	45	56	57	50	60	49	71	44	65	534
3rd	36	25	63	36	42	49	41	48	63	53	456
4th	38	40	52	33	50	58	46	59	51	59	486
5th	47	50	47	69	59	80	50	59	69	53	583
6th	57	61	65	54	83	69	57	66	67	71	650
7th	74	79	80	87	98	98	87	76	97	83	859
8th	86	92	124	111	124	109	108	116	101	122	1,093
9th	120	130	123	116	151	155	141	136	166	124	1,362
10th	119	122	163	134	168	154	130	127	118	111	1,346
11th	85	115	124	128	175	138	111	111	119	134	1,240
12th	79	105	98	91	150	98	88	93	88	79	969
TOTAL -	1,338	1,397	1,668	1,572	1,946	1,842	1,494	1,548	1,573	1,529	15,907

Appendix, No. 5.

PAPER handed in by Mr. *Godfrey Lushington*.

Appendix, No. 5.

EXTRACT.—"GENERAL POLICE ORDERS."

FIRES.

1. UPON any alarm of fire within the division it becomes the duty of the superintendent immediately to repair to the spot, render all the assistance in his power, and take the entire control of the police force assembled, sending, if necessary, for those who are off duty, and to adjoining divisions if more aid is required. If the fire is a serious one he is also to send notice to the assistant commissioner and district superintendent.

2. It is impossible to lay down any precise rule as to the special manner in which the police who first arrive at a fire may be most usefully employed; but the great and principal object to be attained is the saving of life which may be in danger through the fire, and to effect this object the constable is to give immediate alarm by springing his rattle, and arousing the inmates and neighbours.

3. The next steps to be taken are to give or send notice of the fire to the nearest fire-escape station, the nearest fire-brigade station, to the turncocks, and at the police station.

4. Until the arrival of the firemen, the police are to exert themselves in every possible way for the rescue of persons in danger, and the removal of property comformably with the wishes of the proprietors.

5. The police are to clear the street or ground, in the immediate vicinity of the fire, of all persons not usefully employed, taking care that all the adjoining streets, as far as may be practicable, are kept clear of obstructions, by crowds of vehicles, &c., so that the arrival of the engines may not be delayed, or those on business obstructed. Special attention must be directed to the thieves and pickpockets who are usually in the crowd.

6. The police are not on any account to endeavour to direct or control the firemen, who are responsible to their own officers for the measures they adopt.

7. If desired, property may be conveyed to the nearest police station or section house, to be placed under the care of police. Much loss is sustained at fires by the unnecessary removal of furniture, especially from houses not actually on fire. The firemen will be best able to judge whether danger is to be apprehended for the adjoining houses.

8. It frequently happens that in the confusion consequent upon a fire persons enter a house and leave open the doors, which causes an increased current of air to add greater fury to the flames. The police are to prevent this as much as possible; but they are to use their discretion in allowing respectable persons to enter, whose sole object is the saving of life, or to assist the owner in removal of articles of value. Improper characters, whose evident object is plunder, are to be prevented from entering a house under any circumstances.

9. The superior officer of police present at a fire may, if requested by the brigade authorities, give permission for the police who have been engaged there to partake of refreshment at the time, at the cost of not more than 3 *d.* for each man; great care is, however, to be taken that no excess be committed. A serjeant is to be present whilst the constables take such refreshment.

10. The superior officer of police present at a fire is responsible that the permission for the police to take refreshment is not abused, and that no unnecessary delay in the police returning to their duties takes place.

11. If requested by the chief or other officer of the fire brigade (28 & 29 Vict. c. 90, s. 12), to remove any persons who interfere by their presence with the operations of the fire brigade, the officer in command of the police, if he is satisfied that by their presence they do so interfere, is civilly to ask them to remove, telling them at whose request he does so; and, if necessary, after that he is to direct the police to remove them.

12. The police may also clear any street in or near where a fire is burning. The officer in command of the police is to act on his own discretion in giving directions for the purpose.

13. Police, as may be necessary, are to remain at the scene of a fire until it is extinguished and all danger to the public over, and the traffic has resumed its ordinary course.

14. Pass-cards, signed by the Commissioner, have been granted to members of the Metropolitan Board of Works, who are to be allowed, on production of the pass, to go within the lines kept by the police on occasion of fires; but the holder may be removed if by his presence he interferes with the operations of the fire brigade.

15. The superintendent, or, in his absence, the next in command, is to collect upon the spot all the information he can obtain relative to the cause of the fire, which, together with the circumstances attending it, the conduct of the police under his orders, the time they were employed, by whom the engines and turncocks were called, whether by police or others, the duties actually performed, whether in calling the engines or escapes, working the engines, or other special manner, and the time they were withdrawn, are to be fully and carefully reported to the Commissioner on the proper printed form at back of "Morning Report," Form No. 5.

16. Whenever constables are called away from their beats on any sudden emergency, the utmost exertion is to be made to supply their place from the reserve, and to prevent the commission of any offence during the temporary absence of the constables.

17. Chimneys on fire which required an engine to extinguish the fire, or were of a dangerous character, are to be reported. Trifling cases, where the fire was extinguished without the aid of an engine, are not to be reported.

18. Each police constable is to be made acquainted with the situation of the fire escape, fire-brigade station, and residence of turncock nearest to his beat, and the inspectors and serjeants are frequently to question the constables to ascertain that they know them.

19. When any of the police give notice of a fire at a fire-brigade station, they are not to receive any money or gratuity under any circumstances whatever, either as "call money" or as cab fare. If it is necessary to employ a cab, the amount of expense is to be applied for by the superintendent, and will be allowed by Commissioner according to regulations.

20. It is supposed that fires have been caused by persons carelessly or wilfully throwing lighted matches or paper through openings in trap-doors, shutters, &c., of premises where straw, wood, or other inflammable articles are stored, and so setting fire to the stock, and causing great damage. The police are to notice any openings or defective doors, fanlights, &c., through which lights may be thrown, and draw the attention of the occupant thereto, and are also to be on the alert to detect and apprehend any persons seen to throw any lights into premises with a supposed wilful intent.

21. This order is to be frequently read to the men, especially to those who have recently joined, in addition to the usual monthly reading of the orders.

Appendix, No. 6.

PAPER handed in by the *Chairman*.

Appendix, No. 6.

TABLE showing the RATES of PAY and SCALE of PENSIONS authorised for the METROPOLITAN POLICE.

RATES OF PAY.

Superintendents from 300 *l.* to 400 *l.* per annum, by annual increment of 10 *l.*

	£.	s.	d.		£.	s.	d.	
Inspectors.—Chief detective - - -	276	–	8	per annum	5	6	2	per week.
„ Detective - - - -	225	19	8	„	4	6	11	„
„ Chief ordinary - - - -	189	16	–	„	3	13	–	„
„ 1st class „ - - -	162	10	–	„	3	2	6	„
„ 2nd class „ - - -	144	6	–	„	2	15	6	„
Serjeants.—Detective, 1st class - -	162	18	8	„	3	2	8	„
„ „ 2nd class - -	122	4	–	„	2	7	–	„
„ Divisional detective, station duty, and divisional clerks	104	–	–	„	2	–	–	„
„ Ordinary, 1st class - -	93	12	–	„	1	16	–	„
„ „ 2nd class - -	88	8	–	„	1	14	–	„
Constables.—Divisional detectives - -	83	4	–	„	1	12	–	„
„ Ordinary, 1st class - -	78	–	–	„	1	10	–	„
„ „ 2nd class - -	70	4	–	„	1	7	–	„
„ „ 3rd class - -	62	8	–	„	1	4	–	„

PENSIONS AND GRATUITIES.

After 15 years' service completed, pensions may be granted of $\frac{15}{50}$ths of the pay; and for each year of service completed, up to 20 years, an additional fiftieth of the pay.

From 20 to 25 years completed, two-fiftieths for each year; and from 25 years, one-fiftieth for each year, to 28 years completed, when the pension will be two-thirds of the pay, being the limit fixed by Act of Parliament.

All such pensions to be for life.

No pension to be granted for less than 15 years' service, except in cases of injuries received in the actual performance of duty, in which cases pensions will continue to be granted on the scale authorised in General Orders, Para. 8, "Pensions and Gratuities," viz:—

I. Accidental injuries, not incurred through carelessness, partially incapacitating,—
- 5 years' service and under - - - - $\frac{10}{50}$ of salary.
- 10 years' „ - - - - $\frac{12}{50}$ „
- 15 years' „ - - - - $\frac{15}{50}$ „

II. Accidental injuries, wholly incapacitating,—
- 10 years' service and under - - - - $\frac{15}{50}$ of salary.
- 15 years' „ - - - - $\frac{20}{50}$ „

III. Injuries received in the execution of duty, partially incapacitating,—
- 10 years' service and under - - - - $\frac{20}{50}$ of salary.
- 15 years' „ - - - - $\frac{25}{50}$ „

IV. Injuries received in the execution of duty, wholly incapacitating, to be specially considered; but pension in no case to exceed full pay.

V. In all cases the pensions to be subject to revision at the expiration of such period of time as may be named in the letter of recommendation to the Secretary of State.

Gratuities of one month's pay for each year of service will be granted as heretofore, after five years' service, and less than fifteen.

No pension or gratuity to be granted to any police officer except on the certificate of the chief surgeon that he is incapacitated by infirmity, accompanied by the certificate of the Commissioner that he has served with zeal and fidelity.

Metropolitan Police Office,
4, Whitehall Place, S.W.,
6 May 1876.

(signed) *W. Harris*, Chief Inspector.
E. Y. W. Henderson.

Appendix, No. 7.

PAPERS handed in by Captain *Shaw*.

Appendix, No. 7.

Metropolitan Fire Brigade.

Monthly Summary of Fires for Ten Years.

Month.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	Total.
January - -	117	143	118	123	139	161	134	110	130	106	1,281
February -	96	96	140	105	153	140	105	109	117	124	1,185
March - -	116	138	107	155	148	169	133	116	124	133	1,339
April - -	96	91	132	111	180	148	110	134	119	122	1,243
May - -	131	106	148	104	165	168	125	135	137	169	1,388
June - -	95	129	156	121	187	124	119	145	153	125	1,354
July - -	116	102	203	157	200	132	151	159	181	114	1,515
August - -	118	124	147	133	166	210	131	136	131	142	1,438
September -	83	133	143	114	159	152	134	118	103	118	1,257
October - -	113	95	114	147	150	124	98	120	103	96	1,160
November -	130	103	126	145	142	140	145	111	147	132	1,321
December -	127	137	134	157	157	174	109	155	128	148	1,426
Total - -	1,338	1,397	1,668	1,572	1,946	1,842	1,494	1,548	1,573	1,529	15,907

Metropolitan Fire Brigade.

Daily Summary of Fires for Ten Years.

Day.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	Total.
Sunday - -	185	202	233	220	290	286	199	202	222	200	2,239
Monday - -	178	169	227	220	252	202	206	209	228	203	2,094
Tuesday - -	207	219	234	229	258	247	213	237	228	231	2,303
Wednesday -	210	210	267	251	266	302	207	199	195	227	2,334
Thursday -	186	191	229	199	300	271	220	230	240	236	2,302
Friday - -	197	198	225	235	258	258	220	243	231	209	2,274
Saturday -	175	208	253	218	322	276	229	228	229	223	2,361
Total - -	1,338	1,397	1,668	1,572	1,946	1,842	1,494	1,548	1,573	1,529	15,907

Appendix, No. 7.

Metropolitan Fire Brigade.

Weekly Summary of Fires for Ten Years.

Week.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.	1875.	Total.
1st - -	24	31	30	27	20	40	37	22	34	31	296
2nd - -	32	24	27	25	20	37	44	28	38	19	294
3rd - -	27	38	31	30	39	31	22	27	26	21	292
4th - -	19	35	21	30	40	36	27	18	20	21	267
5th - -	29	28	24	32	35	36	14	38	28	29	293
6th - -	23	24	41	23	32	29	29	22	33	32	288
7th - -	20	23	35	25	45	37	24	28	27	31	295
8th - -	29	25	32	26	47	46	27	24	34	30	320
9th - -	20	25	28	30	39	31	26	23	20	31	273
10th - -	40	31	27	35	31	46	34	30	30	34	328
11th - -	23	35	29	34	31	32	24	29	32	22	291
12th - -	23	30	26	35	31	33	30	31	25	33	297
13th - -	23	32	14	33	36	40	34	30	28	34	304
14th - -	23	26	33	16	42	35	25	32	29	32	293
15th - -	21	20	27	35	38	37	26	33	20	22	279
16th - -	23	16	32	29	42	38	29	26	27	35	297
17th - -	23	24	28	25	50	25	19	35	35	24	288
18th - -	25	23	40	20	31	40	36	38	30	32	315
19th - -	23	33	31	28	37	31	28	23	36	31	301
20th - -	32	23	31	24	36	34	17	25	35	54	311
21st - -	38	19	34	25	40	53	33	30	25	33	330
22nd - -	33	18	30	22	39	34	28	38	28	39	309
23rd - -	24	26	33	36	43	29	18	28	40	38	315
24th - -	26	38	32	22	45	32	26	32	42	26	321
25th - -	18	20	37	29	53	21	33	38	30	26	305
26th - -	13	39	48	29	31	32	36	34	28	21	311
27th - -	28	26	41	35	42	24	37	34	38	26	331
28th - -	27	21	46	45	40	33	24	35	40	29	340
29th - -	28	21	57	34	52	32	36	38	59	25	382
30th - -	24	27	43	35	56	28	34	35	39	23	344
31st - -	28	21	43	20	26	40	35	40	25	36	314
32nd - -	23	26	42	23	38	49	25	25	29	28	308
33rd - -	24	28	27	28	34	51	26	27	28	30	303
34th - -	26	35	23	31	48	43	34	40	30	33	343
35th - -	26	30	32	45	45	47	32	31	27	34	349
36th - -	21	34	40	29	30	25	33	17	23	27	279
37th - -	22	23	40	21	40	39	34	28	18	32	297
38th - -	18	29	23	23	35	42	25	26	29	25	275
39th - -	19	35	32	29	38	36	37	34	30	24	314
40th - -	25	24	24	34	55	23	24	32	23	16	280
41st - -	30	19	25	29	43	39	23	32	26	33	299
42nd - -	25	25	26	41	18	29	24	24	19	22	253
43rd - -	24	18	28	36	21	24	24	25	26	18	244
44th - -	26	20	30	32	41	35	21	19	22	23	269
45th - -	33	31	28	41	33	35	35	32	28	26	322
46th - -	22	24	30	32	28	32	36	28	36	29	297
47th - -	31	18	27	20	24	32	37	22	37	34	282
48th - -	38	29	31	40	45	25	27	24	38	37	334
49th - -	25	38	38	29	39	39	23	47	23	27	328
50th - -	23	28	18	39	27	38	28	30	30	33	294
51st - -	33	22	34	26	24	40	20	33	24	28	284
52nd - -	29	33	34	45	44	38	26	35	39	42	365
One day to end of year -	6	6	–	5	7	9	–	3	7	8	51
Two days to end of year -	–	–	5	–	–	–	8	–	–	–	13
Total - -	1,338	1,397	1,668	1,572	1,946	1,842	1,494	1,548	1,573	1,529	15,907

Appendix, No. 8.

PAPER handed in by Captain *Shaw*.

Appendix, No. 8.

METROPOLITAN FIRE BRIGADE.

TABLE showing the Number of FIRE ENGINE STATIONS, MEN, FIRE ESCAPES, and FIRE ESCAPE STATIONS, on the 1st of January in each of the following Years.

YEAR.	Number of Fire Engine Stations.	Number of Men.	Number of Fire Escapes.	Number of Fire Escape Stations.
1 January 1866 - - -	17	131	—	—
1 January 1867 - - -	39	230	—	—
1 January 1868 - - -	43	314	89	85
1 January 1869 - - -	49	373	98	90
1 January 1870 - - -	50	378	102	91
1 January 1871 - - -	50	378	104	92
1 Janunry 1872 - - -	50	387	104	93
1 January 1873 - - -	50	396	125	106
1 January 1874 - - -	50	396	125	105
1 January 1875 - - -	49	395	129	106
1 January 1876 - - -	48	395	132	106

Appendix, No. 9.

PAPERS handed in by Mr. *De la Hooke.*

Appendix, No. 9.

REPORT of Captain *Shaw.*

Chief Station, Watling-street, London, E.C.,
16 December 1871.

With reference to the subject of Mr. Lovell's letter of the 23rd ultimo, and in compliance with the order of the Committee at their last meeting, I have to report that the communication from the London Salvage Corps consists of three parts, which must be separately considered.

1. It is suggested that the mains of the several water companies should be capable of being connected, in case of need, for fire-extinguishing purposes; but no suggestion is made as to the legal or other power by which this arrangement could be carried out. I have reason to believe that the water companies are not without some means of assisting each other in cases of emergency; but as the Committee seemed to be unwilling that I should place myself in direct communication with them, I have only been able to consult such turncocks and inspectors as I have recently met at fires, and the information obtained from them does not at all support the view I have expressed. My recollection, however, of a conversation with some superior officials of a water company a few years ago on this subject is very distinct, and notwithstanding the absence of information on the part of the turncocks, I am inclined to believe, as I have stated, that the water companies have some means of assisting each other in case of emergency.

The allusion to the recent disaster at Chicago as at all bearing on this question is altogether erroneous, as the destruction of the waterworks could not in any way affect the distribution of water throughout the town from the reservoirs, and as a matter of fact, the water supply from the pipes did not fail, except where the pipes were broken, and this, of course, would happen under any system. In Chicago the water works supplied the reservoirs, and the reservoirs supplied the town, and as long as a gallon remained in the reservoirs, which are 200 feet above the level of the lake, all the pipes in the streets must have been not only full but under a heavy pressure.

2. It appears to me that this resolution must have been arrived at many years ago, not on the date which it bears, as it makes recommendations concerning a matter which has long since been attended to by the Board at very considerable cost. Perhaps this will best be understood in figures, as follows: the value of the floating fire-engines, when handed over to the Board, was 3,200 *l.*; it is now 11,500 *l.*, and all the appliances such as hose, branches, ropes, chains, &c., &c., which were formerly very deficient in quantity, have been increased in even greater proportion.

The suggestion about small steamers seems to have been made without consultation with any practical person, as it assumes that a small vessel must necessarily have a lighter draught of water than a large one, which is by no means the case, as the Committee will remember that the reason of Messrs. Samuda making the hull of the paddle float so large, was to ensure her having a light draught, and that even after going to such a size, they have not thoroughly accomplished the object, and have since recommended that she ought to be lengthened.

Again, the allusion to heavy apparatus is altogether a mistake, and refers to the circumstances of many years ago. The Board have never purchased any of the heavy gear such as was formerly in use, and at the present moment we have not one article of the old unwieldy kind remaining; all the hose and other appliances used with the floating engines have been for the last three or four years of precisely the same kind as those used with the steam and manual fire-engines on land.

The suggestions on this subject have obviously been made without inquiry into the existing condition of the brigade or the practical difficulties of the subject. The Board has within the last five years made very large and important improvements in this branch of the service, and if they desire at any future time to go further in the same direction there will

will be no difficulty except financially in carrying out their wishes, but the work will be done in a very different manner from that suggested by the insurance companies.

3. We have for several years had direct telegraphic communication between the head-quarters of the police and this station, but it so happens that we have not in all that time had as much as one first call to a fire from them, and I am therefore not encouraged to expect much help in this way, but should rather be inclined to look to a further development of our own system for the purpose of obtaining early intelligence of fires. I have very little doubt that for any additional sum which the Board may authorise to be spent in this way we should obtain a better result from the establishment of signal-boxes in intermediate places between our fire-engine stations, than from any junction which could be effected with the exceedingly slow and ponderous system which the police have adopted.

As to the suggestion that organised arrangements should be made for the police giving immediate notice of fires, I have only to say that such arrangements have always existed, and that I have no fault to find with the way in which they are carried out, but, on the contrary, every reason to believe that the police render us very efficient service in this way.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

Metropolitan Board of Works.

MEMORIAL of the Officers and Men of the Metropolitan Fire Brigade, praying the Board to adopt a Scale of Pensions for the Brigade.

To the Metropolitan Board of Works, Spring Gardens, S.W.

Metropolitan Fire Brigade, Watling-street, E.C.,
28 February 1874.

Gentlemen,

We, the undersigned officers and men of the Metropolitan Fire Brigade, serving under your honourable Board, view with consternation and alarm the position we hold with regard to the future of ourselves and our families, in the event of our becoming incapacitated, either through accident, ill-health, or old age, from further service.

We therefore beg leave to remind your honourable Board that last year we humbly petitioned you to consider an appeal made by us to lay down a scale of pensions, to which we received an answer to the effect that the Board were not then prepared to do so; and also that since that time several of our men have broken down, and have been dismissed from the service without any provision whatever for their future; and therefore it is that we desire most respectfully and seriously once more to draw your attention to the great necessity which exists of adopting a scale of pensions, whereby any one of us, through any of the above causes, or, in case of death, our wives and families, may be entitled to receive a pension according to the position held by us at the date of our incapacity.

With this object we beg leave most humbly to submit for the consideration of your honourable Board the following suggestions, the adoption of which we think would afford us a fair and reasonable compensation :—

That if any member of the brigade become disabled in consequence of injuries received in the execution of his duty, and is unable to gain his own livelihood, he shall be entitled to receive a pension of not less than the maximum amount of 25-40ths, or 5-8ths of his pay.

That if any member, after having completed five years in the brigade, shall become unfit for further duties through ill-health, he shall receive a gratuity of one month's pay for each year so completed up to 10 years.

That if any member, after having served 10 years, shall become incapacitated, he shall receive a pension equal to 10-40ths, or 1-4th of the salary of which he may be in receipt at the time of his disablement; this pension to increase 1-40th for each additional year's service completed, until he shall have served 25 years, when he shall be entitled to receive the maximum amount of 25-40ths, or 5-8ths of his pay.

That in the event of any member being killed in the execution of his duty, his widow, or, if there be none, his surviving children (if there be any), shall be entitled to receive the maximum amount as shown above, irrespectively of the length of his service.

In asking your honourable Board kindly to consider and adopt a scale of pensions, we are of opinion that we should all subscribe to the fund, the amount of such subscription to be determined hereafter.

We also beg most respectfully to call your attention to the existence of the "Disabled Firemen's Relief and Pension Association," and likewise to the fact that several men who have served a number of years in this brigade, and who have been discharged without any means of gaining a livlng, are now receiving a remuneration from that society; thus enabling the said association to impose on the general public by inducing them to subscribe to their fund.

Appendix, No. 9.

The establishing of a scale of pensions, as suggested by us, would tend very materially to suppress the existence of a society of this kind, which we consider to be nothing less than fraudulent.

We beg further most respectfully to submit to the consideration of your honourable Board the fact that the duties of the brigade are exceedingly laborious and injurious to health. The men for its service are selected almost entirely for the soundness of their constitutions, and are, before being admitted to its ranks, subjected to a most strict medical examination; but notwithstanding this a great number break down, and in every case have left the service shattered in health, and altogether incapable of following any employment in order to enable them to support themselves and their families; and as, under the present regulations they are totally unprovided for, they soon become reduced to a state of helpless destitution.

We would also wish particularly to draw the attention of your honourable Board to the fact that during the years 1871, 1872, and 1873, about 200 men resigned their appointments in the brigade, the principal reasons assigned being—First, that finding there is no stipulated time for retirement, their chances of promotion or pension are very remote; and, secondly, that should their constitutions become undermined after years of service, the amount of compensation they are likely to receive would be totally out of proportion to the injury sustained. The consequence is, that after having put your honourable Board to considerable expense in order to fit them for their duties as firemen, in many cases, after a few weeks' service, they resign for other and more healthful employment.

It must, therefore, be quite obvious to your honourable Board, that, situated as we are, and having so many dangerous duties to perform, we are naturally most anxious to be assured of having some means of subsistence should we have the misfortune to become unfit for the service; and we therefore trust that this our petition will meet with your most careful consideration.

In conclusion, we beg leave to assure your honourable Board that we shall continue, as heretofore, to give every attention to your rules and regulations; and shall endeavour, as far as lies in our power, to perform our duties with cheerfulness and diligence.

Trusting that our case may be thought worthy of your earnest attention, and that in its most essential points it may meet with your kind approval and support.

We have, &c.
Signed by all the Engineers and Firemen in the Brigade.

Metropolitan Board of Works.

REPORT of the Works and General Purposes Committee of the 21st February 1876, upon the Question of the use of Hydrants for Extinguishing Fires, and Draft of proposed Reply to the Letter of the East London Waterworks Company of the 14th January 1875.

Extract from the Report of the Works and General Purposes Committee of the 21st February 1876.

Your committee have proceeded upon the resolution of the Board of the 27th February 1874 (No. 4), referring it to them to take the necessary steps for the testing of the hydrants which the Board on the 14th November 1873, determined should be fixed in the Kent Water Company's district. In connection with this your committee have considered the general question of placing fire hydrants throughout the metropolis, and have directed their attention to the letters from the water companies, referred by the Board on the 12th February 1875 (No. 4), in reply to the communication from the Fire Brigade Committee on the subject of the supply of water at fires. Subsequently to the date of these references, the Board, on the 23rd April last (No. 8), authorised the members of the sub-committee appointed by your committee on the subject to visit Manchester and Liverpool to obtain further information with respect to the use of hydrants in those places, and to ascertain by personal observation the manner in which that mode of extinguishing fires operated under various conditions. The information obtained by the members of the sub-committee, and the particulars of the experiments they witnessed, have been put together in the form of a pamphlet, copies of which were sent in November last to all the members of the Board, so that they will have been able to make themselves acquainted with the particulars. The Board will probably be of opinion that the recorded results of what was seen by the sub-committee show that the system of hydrants in places where there is a constant water supply under really high pressure, as at Manchester and Liverpool, is of great value, and if the conditions of the water supply in London were similar to those which exist in the two northern towns, there might be good reason for the Board to adopt the same system. The conditions are, however, far from being the same. The water supply is not in the hands of the local authorities, the pressure is by no means so great or so certain, being derived, not from gravitation from a high source of supply, but, generally speaking, from being forced through the pipes by pumping. The sub-committee, wishing to ascertain as nearly as possible

possible what the ordinary condition of things is in the metropolis as regards the pressure in the water mains, instructed the Board's engineer to make a number of observations in various parts of the metropolis, in the districts of the different companies, and at different levels. The engineer has made an extended series of observations, and has shown upon a map the various degrees of pressure that prevail in different parts of London; he has also made a report, which your committee think will be of interest, and which they accordingly submit herewith. It will be seen from this that the question of the height to which water issuing from a stand pipe could be thrown is one which depends upon so many conditions that it is difficult to determine it with any exactness; but Sir Joseph Bazalgette, in reply to the sub-committee, has distinctly given it as his opinion that hydrants for the purpose of extinguishing fires would not be of real practical advantage to the Board unless a sufficient pressure of water were insured, and that this cannot be the case so long as the management of the water supply is under the independent control of the different companies. Captain Shaw has expressed himself to the same effect.

In some parts of London, such for instance, as Thames-street, where much highly inflammable merchandise may be stored, and where it is consequently of importance that water should be brought to bear upon the fire at the earliest moment, and, where, owing partly to the low level of the locality, the pressure of the water is sufficient, it might be expedient for the Board to affix hydrants. This is a matter which the Board will doubtless take into consideration. Upon the general question, however, your committee, after full consideration of all the circumstances, as placed before them by the sub-committee, have arrived at the conclusion that the placing of hydrants throughout the metropolis would not at present be of such public utility as to justify the Board in incurring the immense expenditure which the operation would entail.

In the letter of the East London Waterworks Company of the 14th January 1875, the Board's proceedings upon this question are seriously impugned, and the Board is urged to take immediate measures for placing hydrants upon the mains and constantly charged services of that company. The sub-committee have prepared a draft reply, which embodies the statements and conclusions of this report, and your committee submit this for the consideration of the Board, and recommend that it be approved and forwarded to the East London Waterworks Company.

DRAFT of proposed REPLY to the LETTER of the East London Waterworks Company.

Sir,

THE Board has had under consideration your letter of the 14th January 1875, in reply to one addressed to you by the Fire Brigade Committee with reference to the delays which occasionally occur in obtaining a supply of water at fires. You refer the Board to your letters of the 17th December 1872, and the 31st December 1873, in which you state the number of miles of mains and service pipes in which there is a constant supply at high pressure, on which fire hydrants might be placed, and make mention of the notices which the company has served upon the Board of its intention to give a constant supply in various districts within the company's water limits. Of these communications you complain that the Board has taken no notice beyond acknowledging their receipt.

You conclude by urging the Board to place proper hydrants upon those mains which are constantly charged, and intimate that, if this be not done, upon the Board will rest the responsibility of withholding the proper means for the extinction of fires.

It appears necessary at the outset to deal with that part of your letter which refers to the fact that, beyond acknowledging the various notices and letters from the company, no communication has been made to the company on the subject of them, and in which it is inferred that those letters have never been considered, and that the bearing of the company's action has not received attention. So far from this being the case, the Board, directly it had ascertained that the system of constant supply in one of your company's districts, and in one of the districts of another company, was in operation, caused a careful house to house inquiry to be made throughout those districts to ascertain whether the supply afforded was sufficient, what inconvenience the occupiers of the houses were put to in altering the fittings, what was the expense of the alterations, and many other particulars. These inquiries occupied several persons many months.

Turning now to the principal subject of your letter, which is the provision of hydrants as a means of extinguishing fires, the question is this:—Is it the duty of the Board, under existing circumstances, to place hydrants on all the permanently charged mains, not only of the East London, but of all the Metropolitan water companies, who have already adopted, or may hereafter adopt, partially or wholly, the system of constant supply.

The directors of the East London Company, it is true, state in the concluding paragraph of their letter that they write without reference to the other companies or the conditions of the water supply in the other parts of the metropolis; but they, of course, well know that the Board's responsibilities extend to the whole of the area under its jurisdiction. The question of providing hydrants, therefore, assumes a most serious aspect, involving as it does, the establishment of an entirely new system, so far as the metropolis is concerned, of extinguishing fires, at a large additional expenditure, with grave doubts whether the new

Appendix, No. 9.

system might not possibly in the end fail to supersede the costly but very efficient establishment at present existing.

The Board, as the authority charged by the Legislature with the extinction of fires in the metropolis, has felt it to be its duty to urge the importance of a constant supply of water at high pressure for the extinguishing of fires, and has from time to time directed the attention of the companies to the delay which has occurred in obtaining water at fires, as the Board is convinced that if the existing mains and services were constantly and continuously charged, the fire brigade would, without the use of hydrants, be able to obtain a sufficient supply of water for extinguishing fires. To these communications are probably due the company's urgent appeals to the Board to place hydrants on the mains, as apart from the service pipes, as being the only proper means for the extinction of fires.

Great stress is laid in your letter on the alleged neglect of the Board in not providing hydrants, and you say, "that the directors are constrained to conclude that the bearing on this subject of this company's action in the districts which they have brought, and are bringing, entirely (mains and services) into constant supply under pressure has never received the attention of your Board." This conclusion, however, is an erroneous one. Immediately after the passing of the Metropolis Water Act of 1871 the bearing of the 34th section of that Act, which relates to fire hydrants, was carefully considered, and at no time since then has the matter been lost sight of.

The question for consideration appeared to be whether the conditions of the water supply of London would admit of hydrants being made available as a substitute in ordinary cases for fire engines as they are in certain northern towns, where the water, gravitating from reservoirs at a high level, flows through the pipes at such a pressure as that when a hose and jet are put on a stand-pipe, the water is thrown continuously to the tops of the highest buildings.

It appeared to the Board that the necessary conditions for such a use of hydrants did not generally exist in London, but in view of the representations made by the Water Companies, and of an opinion, which was more or less generally held, that hydrants might be effective for extinguishing fires, the Board determined, in November 1873, to make a trial of hydrants in one of the districts placed under constant supply on the south side of the Thames. The results of this trial were not such as to encourage the hope that hydrants could at present be brought into general use in the Metropolis, as a means of extinguishing fires without engines.

After this the Board, desiring to obtain all the information possible on this important subject, applied to the Corporations of Manchester, Edinburgh, Glasgow, and Liverpool for the results of their experience. The particulars furnished by these corporations were fully considered, and, as there were many points upon which further information was required, and which it appeared could only be obtained by personal observation and inquiry on the spot, a sub-committee was deputed to visit Manchester and Liverpool, to make these inquiries, and to ascertain all the facts which could help the Board in its consideration of the question.

The information obtained by the members of this sub-committee, and the experiments they witnessed, conclusively showed the value and efficiency of hydrants for extinguishing fires where there is a constant water supply under really high pressure.

It appears that in Manchester and Liverpool hydrants are sufficient for all ordinary fires without the aid of engines, and it is probable that if water were applied in London under the same conditions, that is to say, if the Board had control over the pressure, the size and fittings of the mains, and the direction of the flow through them, hydrants might, in most cases, be equally serviceable. The conditions of the water supply in the two large northern towns are, however, so entirely different from those of London, that the idea of obtaining the same results in the metropolis, from the adoption of hydrants, cannot for the present, at any rate, be entertained.

At Manchester the waterworks are the property of the Corporation. The water is served from 13 reservoirs, the surface of water in the highest of these used for the extinction of fires being 478 feet above Ordnance datum. The supply to the city is consequently by gravitation and constant high pressure, and from the variety in the levels of the reservoirs, a choice of three or four different pressures can be obtained for extinguishing fires, according to circumstances.

The conditions of the water supply for the extinction of fires in Liverpool are very similar to those of Manchester.

In London, on the other hand, the conditions of the water supply are, it is hardly necessary to point out, entirely different. The water, instead of flowing through the pipes under a high pressure derived from the height of the source of supply, is more generally forced through by pumps, and from observations made under the direction of the Board's engineer, in many parts of London, in the different companies' districts and at various heights, it appears that the rates of pressure vary so much and in some parts are so low, that it would be impossible to rely upon such pressures to furnish continuously jets of sufficient height for fires. The figures placed before the Board lead it to this conclusion, and the Board's engineer distinctly advises with reference to the use of hydrants for the purpose of extinguishing fires, that they would not be of real practical advantage to the Board, unless a sufficient pressure of water were ensured, and that this cannot be the case so long as the management

management of the water supply is under the independent control of different companies.

In reply, therefore, to the representations made by the East London Waterworks Company on the subject, I am directed to say that the Board, taking account of all the considerations which affect the question, and especially the pressure found to exist in the districts in which a constant supply is given by your company, is of opinion that the placing of hydrants throughout the district of the East London Water Works Company would not, at present, be of such public utility as would justify the Board in incurring the large expenditure which the operation would entail.

I am, &c.

The Secretary of the
East London Water Works Company.

Appendix, No. 10.

PAPER handed in by Mr. *De la Hooke*.

Appendix, No. 10.

EXTRACT from Fire Brigade Committee Minutes, 9 January 1866 (No. 1).

Gentlemen, 68, Watling-street, E. C., 8 January 1866.

IN compliance with your instructions I have the honour to lay before you letters which I have received from the two principal steam fire engine builders, Messrs. Shand & Mason and Merryweather respectively.

Messrs. Shand & Co. offer for immediate sale—

	£.
Three small steamers at 400 *l.* each - - - - -	1,200
Three larger steamers at 600 *l.* each - - - - -	1,800
TOTAL - - - £.	3,000

The whole to be fitted with hose boxes, feed vessels, and other apparatus specially required for London purposes.

Messrs. Merryweather offer two new steamers at 380 *l.* each; total 760 *l.*

I strongly recommend the immediate purchase of all these engines, and I think it would be advisable that, in the event of this recommendation being adopted, the price of Messrs. Merryweather's be any sum not exceeding 400 *l.* each, as it may prove both economical, and in other respects advisable to add a few items not included in the present estimate, such as feed vessels, &c., &c.

Such engines as those are urgently required for land service, and it appears to me a most fortunate circumstance that they can be had without delay.

I have, &c.
(signed) *Eyre M. Shaw*,
Chief Officer of the Metropolitan Fire Brigade.

EXTRACT from Fire Brigade Committee Minutes, 8 August 1866 (No. 7).

Read a Report as follows, prepared in pursuance of the Resolution of the Committee at their last meeting (No. 10):—

"Fire Brigade, Chief Station, Watling-street,
"London, 4 August 1866."

"Question of expediency of the Board purchasing the steam fire engines at present hired of Messrs. Shand & Mason, Roberts, and Easton & Amos, to be considered next Tuesday, and Captain Shaw to report all particulars as to the said engines, the terms on which they are hired, &c."

In

In compliance with the above Resolution I have to report that the Board has at present on hire the following six engines at the prices mentioned opposite them respectively, viz. :— Appendix, No. 10.

FIRM.	Stationed at	Cost per Month.
		£. s. d.
Shand & Mason - - -	Ratcliff - - - -	12 – –
Shand & Mason - - -	Bishopsgate-street - - -	12 – –
Shand & Mason - - -	King's-street, Regent-street -	12 – –
Roberts - - - - -	Tooley-street - - -	12 – –
Shand & Mason - - -	Rotherhithe - - - -	12 – –
Easton & Amos - - -	Lower Float - - - -	21 – –

I have communicated with the engine builders as to the prices at which they would sell their respective engines, and I append their answers, from which it appears that Shand & Mason would sell their four engines as they stand, for 300 *l.* each, or would give them a complete overhaul, putting them in the same condition precisely as the new engines lately purchased of them by the Board, and sell them for 350 *l.* each ; that Roberts would sell his engine, after a complete overhaul, which, however, is hardly necessary, and properly painted, for 360 *l.*; and that Messrs. Easton & Amos would sell theirs as it stands, for 850 *l.*, or with the addition of a pair of twin screws driven by separate machinery, for 1,310 *l.*

With regard to the first four engines, I should recommend that Messrs. Shand & Mason's proposal for 1,200 *l.* as the engines stand, be declined, but that the offer to sell the four, after a complete overhaul, and in the same condition as the other engines lately purchased of them, be accepted.

I should recommend also the acceptance of Roberts' offer for 360 *l.*, and in both cases it would be advisable, in the event of the Board acting on these recommendations, to put in a clause to the effect that the boilers should be forced to a pressure of 225 lbs. on the square inch, and that the engines should be in this, and all other particulars, to the entire satisfaction of the chief officer of the Metropolitan Fire Brigade, or such other person as the Board should appoint for the purpose.

I estimate the ordinary repairs of these five engines, after their overhaul, at about 100 *l.* a year, and the consequent annual saving to the Board, under the arrangement here proposed, as follows, viz. :—

		£.
Five engines, at 12 *l.* a month - - - - - - -		720
Purchase-money of five engines, 1,760*l.*		
Interest at 10 per cent. - - - - - -	£. 176	
Estimated cost of annual repairs - - - - -	100	
		276
Making an annual saving of - - - - -	£.	444

After allowing 10 per cent. per annum for interest of capital and deterioration of value.

With regard to the other engine, viz., that of Messrs. Easton & Amos, I should say that both the offers, namely, that of 850 *l.* as it stands, and 1,310 *l.* with the proposed additions, appear fair and reasonable. I should recommend, however, that that of 850 *l.* be declined, as it is obvious that the Board would not be satisfied with having such an engine without means of propulsion, and that Messrs. Easton & Amos be requested to submit to the Board, at an early date, a complete specification, with drawings of the work they propose to add; and I think it very probable that it may be to the interest of the Board to purchase this engine also, and discontinue the present contract.

The saving may be estimated as follows, viz. :—

		£.
Present annual cost, at 21 *l.* per month - - - - - -		252
Purchase-money, 1,310 *l.* ; interest, 10 per cent. - -	£. 131	
Keeping in repair - - - - - - - - -	30	
		161
Making an annual saving of - - - - -	£.	91

After allowing 10 per cent. per annum for interest of purchase-money and depreciation of value.

(signed) *Eyre M. Shaw*,
Chief Officer, Metropolitan Fire Brigade.

 Resolved,—

Appendix, No. 10.

Resolved,—That it be recommended to the Board to purchase six new steam fire engines, and that Captain Shaw do ascertain from Messrs. Shand, Mason & Co., and Messrs. Merryweather & Sons, in time for the meeting of the Board on Friday next, whether they have any new steam fire engines in hand, similar to those purchased of them by the Board in February last for 400 *l.*, and if not, how soon they would undertake to supply six, and at what price.

Resolved,—That Messrs. Easton, Amos & Sons be requested to send in a detailed specification, with drawings of the propelling machinery, &c., which they would undertake to supply to the float and steam fire engine belonging to them, for the price at which they offer to sell the same, viz., 1,310 *l.*

Extract from Fire Brigade Minutes, 11 February 1868 (No. 17).

Chief Station, Watling-street, London,
6 February 1868.

I have to report that there is a very great necessity for an increased supervision of the men on duty both in the stations and with the fire escapes, and as this is a duty on the complete performance of which the success of the organisation of the fire brigade entirely depends, I most respectfully beg the attention of the Committee to the following statement and recommendations.

The number of engineers is at present 30, and that of sub-engineers 17, making a total of 47 officers available for the purpose of visiting 43 engine stations and 87 fire escapes. This number, with the ordinary deduction for sickness, leaves about 43 or 44 officers to visit 130 places, walking about 250 miles, or an average of five miles each, in addition to their regular work at home, their attendance at fires, and their visits to men on duty after fires.

I would, therefore, most respectfully recommend that the number of sub-engineers be increased by 13, so as to make them as numerous as the engineers.

This would give us 60 officers available for visiting and inspection duties, and would consequently render the supervision much more complete than at present.

It will be in the recollection of the Committee that on the addition of the fire escape men in last July, the number of the first class firemen was fixed at 75, and that of the second class firemen at 63, and considering all the circumstances of that time, it would perhaps have been impossible for the Board to have made either rank less, without doing some injustice to individuals of one or other of the two forces.

Since then, however, we have become thoroughly consolidated, and now the change which I take the liberty of recommending is one which will be of the greatest benefit to the brigade, and without doing the smallest injustice to any individual, will prove a source of permanent economy to the Board.

I therefore recommend as follows, namely :—

That the number of sub-engineers be raised to 30;
That the number of first class firemen be reduced to 60;
That the number of second class firemen be reduced to 60;
And that the number of these three ranks be fixed permanently at these figures, notwithstanding any increase that may take place by adding to the third class.

The result of these changes would raise our number of officers to a properly efficient strength, and would prove a permanent saving in wages.

Should these recommendations meet the approval of the Committee, I beg to submit the following names of first class firemen who have proved themselves worthy of promotion, viz. :—

No. 55 Herbert Williams.	No. 64 Henry Ward.
„ 56 Henry Dubber.	„ 65 William Hutchings.
„ 57 George Bull.	„ 66 Thomas Scott.
„ 58 John Bailey.	„ 67 Edward Bailey.
„ 59 Edwin Cockburn.	„ 68 Robert Fisher.
„ 60 Joseph Payne.	„ 69 James Potter.
„ 63 Robert Styles.	

The places of these men in their present class would of course not be filled up, and no other steps would be necessary in consequence of the change.

This is the most important recommendation which I have had to make since the incorporation of the parish engineers, and I have consequently given the subject great attention, and considered it from every possible point of view before presenting it to the Committee.

It is a question altogether of organisation, and one most seriously affecting the present efficiency and future well-being of the brigade, and I trust that the recommendation which I have taken the liberty of making may meet the favourable consideration of the Committee.

(signed) *Eyre M. Shaw*,
Chief Officer, M. F. B.

EXTRACT from Fire Brigade Committee Minutes, 17 March 1868 (No. 14).

Chief Station, Watling-street, E.C.,
London, 16 March 1868.

WITH reference to the subject of Mr. Clarke's letter of the 20th ultimo, I have to report that I have inspected the two fire escapes, and have found them excellent machines in every respect.

No. 2 is of precisely the same pattern as that recently purchased by the Board, except in the canvas trough, which is arranged on an improved plan.

No. 3 is also on the same pattern, with the same improvement, and the reason for its higher price is that it is a larger machine, and throws much higher.

In many parts of London the escapes are not long enough to reach the top rooms of the new houses, which, as the Committee is aware, are now built to a much greater height than formerly, and it would consequently be a great advantage to the fire brigade to have these larger and more improved machines.

I should therefore recommend that a negotiation be opened with Mr. Clarke for their purchase; but as I have previously reported to the Committee, the prices hitherto paid seem to me to have been high, and I should not recommend that these machines be bought unless Mr. Clarke consents to an abatement of at least 10 or 15 per cent. on the sums named in his letter.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

EXTRACT from Fire Brigade Committee Minutes, 26 May 1868 (No. 16).

Chief Station, Watling-street, E.C.,
London, 21 May 1868.

I HAVE to report that it is advisable to make immediate arrangements for the supply of new fire escapes.

I beg to recommend that 10 new machines be obtained each year for the three years, 1868, 1869, and 1870, and that they be made according to the accompanying specification, with a proviso that, in the event of any changes being introduced, it be left to the chief officer of the Metropolitan Fire Brigade, or such other person as the Board shall appoint for the purpose, to name the cost of such alteration, whether as a reduction or an addition to the contract price.

I should also recommend that the persons tendering be called on to give two prices, one the actual price, and the other the price which they would charge, taking old machines in exchange.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

EXTRACT from Fire Brigade Committee Minutes, 26 May 1868 (No. 17).

Chief Station, Watling-street, E.C.,
London, 21 May 1868.

I HAVE to report that 50 new watch boxes are at present required for the use of the fire escapes, and I beg to recommend that they may be made according to the pattern now in our workshops at Thames-street, painted vermillion, and lettered in black, "Metropolitan Fire Brigade."

I also beg to recommend that the maker be called on to give two prices, one the actual price, and the other that which he would charge, taken the old boxes in exchange.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

EXTRACT from Fire Brigade Committee Minutes, 29 October 1868 (No. 29).

Chief Station, Watling-street, London,
26 October 1868.

I HAVE to report that 20 new watch boxes are at present required for the fire escapes, and I beg to recommend that they be made according to the same pattern as those last supplied.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

Appendix, No. 10.

Extract from Fire Brigade Committee Minutes, 6 December 1870 (No. 21).

Chief Station, Watling-street, E. C.,
London, 5 December 1870.

I have to report that the removal of the fire-engine station from Crown-street, Soho, makes it desirable to alter the arrangements at Holborn in some important particulars, as in future the fire-escapes hitherto attached to Crown-street must be worked from Holborn, and all the fires in the neighbourhood of St. Giles's must be first attended to by the Holborn station.

At present there is a steam fire-engine at the Holborn station, and there is a manual engine in Mr. Manning's shop close by, which is always available during business hours, but not at night, and the stables are in Eagle-yard at a distance of 100 yards.

The Crown-street station is manned by an officer and eight men, four of whom do duty on board the floating engines, and four with the escapes, and the men when not engaged on either of these duties work the station and attend fires.

I should propose now to give up the stables in Eagle-yard, and take temporarily a small house at the back of the Holborn station, which would hold the manual engine, the horses, and a sufficient number of the men to work the additional escapes.

I believe that if I receive authority from the Committee on the 6th instant, I shall be able to get the premises in question for a short time at a rent not exceeding 30 *s.* a week, which is about the same as we are now paying for the stables and the lodgings of men living out.

If this or some similar measure be not adopted, I fear we shall have no option but to remove the steamer from Holborn and substitute a manual engine for it, as it would be unsafe to leave that important district without some means of suppressing fires within the first few minutes as hitherto provided by the Crown-street manual.

(signed) *Eyre M. Shaw,*
Chief Officer, M. F. B.

Extract from Fire Brigade Committee Minutes, 24 October 1871 (No. 15).

The Committee further considered the question of the provision of additional fire-escapes for parts of the metropolis now unprotected.

Read a report as follows:—

Chief Station, Watling-street, London,
23 October 1871.

In compliance with the order of the Committee at their last meeting (No. 17), I have to report that fire-escapes are most urgently needed at the following places:—

Highgate, at the fire-engine station;
Camden-road, near the Brecknock-road;
Woolwich, at the fire-engine station;
Lewisham, near the church;
Brixton, at the fire-engine station;
Wandsworth, at the fire-engine station.

The number of men necessary to work these escapes will be nine.

(signed) *Eyre M Shaw,*
Chief Officer, M. F. B.

Extracts from Fire Brigade Committee Minutes, 5 February 1872 (No. 11).

Chief Station, Watling-street, 5 February 1872.

With reference to the subject of the memorial from the Board of Works for the Hackney District, and in compliance with the Order of the Committee at their last meeting, I have to report that if the Committee decide to place a fire escape at Stoke Newington, it could be worked with one additional man if allowed to stand at the station, or with two additional men if placed anywhere else in the parish.

It is certainly desirable to establish a fire escape at Stoke Newington as soon as the Committee find it convenient to do so.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

Appendix, No. 10.

EXTRACT from Fire Brigade Committee Minutes, 25 March 1873 (No. 23).

Read a Report as follows:—

Chief Station, Watling-street, 20 March 1873.

I HAVE to report that I have exhausted all the means hitherto at my disposal for effecting communication between the floating fire engines and the shore over large expanses of mud, and that the time occupied in accomplishing this object is still, under certain conditions of the tide, upwards of 30 minutes, and in many cases nearly an hour. Under these circumstances, I should recommend the adoption of Rogers' patent apparatus, which consists of a mortar and fittings, and enables the men on board to pass a block and a double line of rope on shore to the required distance, 600 feet, in less than 30 seconds. I have seen the approaches at work, and applied for particulars to Mr. Rogers, whose answer I append, stating that he would supply the four vessels for 100 *l.*, which I consider a very reasonable price.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

EXTRACT from Fire Brigade Committee Minutes, 16 February 1869 (No. 7).

Chief Station, Watling-street, London,
13 February 1869.

WITH reference to the subject of the above order, I have to report that the number of men temporarily employed as supernumeraries, in place of men sick and suspended, has been as follows since the commencement of the present year. No man is ever hired in this way except when actually needed, and a reference to the following table will show that in many cases we remain short-handed to avoid expense.

The supernumeraries are selected from the Board's list of candidates, and thus acquire a partial knowledge of their work previously to their regular appointment.

I can see no other way in which the enormous number of watches can be kept up with our very small force, as there must always be a considerable proportion of sick and injured men; but it is a question for consideration whether it would not be advisable to hire the average number permanently, and thus enable me occasionally to relieve any of the older hands when they are overworked.

(signed) *Eyre M. Shaw,*
Chief Officer, Metropolitan Fire Brigade.

A table showing the number of men sick and suspended, and the number temporarily employed to fill their places during each day of the present year was laid before the Committee.

METROPOLITAN FIRE BRIGADE.

TABLE showing the Number of Men Temporarily Employed as Supernumeraries in place of Men Sick and Suspended.

DATE.	Number Sick.	Number Suspended.	TOTAL.	Number of Supernumeraries Employed.	DATE.	Number Sick.	Number Suspended.	TOTAL.	Number of Supernumeraries Employed.
1 January	15	5	20	12	23 January	12	–	12	11
2 „	15	5	20	12	24 „	13	–	13	7
3 „	16	5	21	1	25 „	13	–	13	11
4 „	16	5	21	12	26 „	13	1	14	11
5 „	15	5	20	12	27 „	14	1	15	11
6 „	14	5	19	12	28 „	14	1	15	11
7 „	13	5	18	12	29 „	13	1	14	11
8 „	13	5	18	12	30 „	14	1	15	11
9 „	12	5	17	12	31 „	14	2	16	7
10 „	12	5	17	8	1 February	15	2	17	16
11 „	12	5	17	12	2 „	15	2	17	16
12 „	12	–	12	7	3 „	13	–	13	18
13 „	12	–	12	7	4 „	12	–	12	18
14 „	12	–	12	7	5 „	12	–	12	18
15 „	10	–	10	7	6 „	11	4	15	17
16 „	10	–	10	7	7 „	10	4	14	8
17 „	10	–	10	3	8 „	10	4	14	17
18 „	11	–	11	11	9 „	10	4	14	16
19 „	12	–	12	11	10 „	11	4	15	16
20 „	13	–	13	11	11 „	10	4	14	16
21 „	12	–	12	11	12 „	10	4	14	16
22 „	12	–	12	11	13 „	10	4	14	15

Eyre M. Shaw,
Chief Officer, M. F. B.

Appendix, No. 10.

SUB-COMMITTEE FIRE BRIGADE, 20th April 1869 (No. 5).

THE chief officer, in reply to the committee, stated that during the summer months when the work of the brigade was lighter, it would not be necessary for him to employ supernumeraries, as the duties of the men disabled by sickness or otherwise might be distributed amongst the other members of the force, but that in the winter he thought it would sometimes be necessary to employ supernumeraries.

Resolved, that it be recommended to the Fire Brigade Committee to instruct the chief officer to discontinue the employment of supernumeraries after the 1st proximo, and that if in the winter, additional assistance is required at any time, he do obtain the instructions of the committee on the subject.

EXTRACT from Fire Brigade Committee Minutes, 10th May 1870 (No. 19).

Chief Station, Watling-street, E.C.,
London, 21 May 1868.

I HAVE to report that it is desirable to make arrangements as soon as possible for the manning of the Wandsworth Station, in which I presume it will be the wish of the committee to commence a duty at an early date.

All hands are at present overworked, and it is therefore not safe to undertake this additional duty without withdrawing the necessary number of men from some of the private watches, such as the theatres, or adding to the existing staff by new appointments.

When the duty commences, I should recommend that the stock consist of a large manual fire engine, a small manual fire engine, and a fire escape, with the usual appliances, and as there are not many fires about Wandsworth, I should recommend that an attempt be made to carry on the duty with three men, who, in such a place, may be found sufficient for keeping the watches, looking after the engines and gear, and attending chimneys and fires.

In the event of the committee deciding to provide men from the existing staff by withdrawing some of the private watches, I should recommend that the two theatres now attended, namely, the Queen's and the Prince of Wales's, be selected for discontinuance, and in the event of providing by means of an addition to the staff, I should recommend that, George Nazer, Caleb Mears, and James Sanders, who came before the committee on the 12th instant, but could not be appointed, owing to the fact that there were not places vacant, be now allowed to take duty.

Should the committee desire further information as to the present duties, I beg to recommend that the surgeons be called on to report their views on the subject.

(signed) *Eyre M. Shaw*,
Chief Officer, M. F. B.

EXTRACT from Fire Brigade Committee Minutes, 10 May 1870 (No. 19).

Chief Station, Watling-street, E.C.,
London, 4 May 1870.

I HAVE to report that the pulling down of the houses at Doctor's Commons leaves me absolutely without any place in which instruction concerning the use and management of the fire escapes can be given to the new men. The requirements are a flat piece of ground with a run of about 20 or 30 yards, a high wall and roof, and side windows at several levels, and any old building would suit for the purpose.

I am much indebted to Mr. Vulliamy for the use of several old buildings which he has from time to time allowed me for this purpose, but as far as I can ascertain, there are no others in his hands at present available.

I therefore beg to recommend that I be authorised to rent a warehouse or dwelling house in this neighbourhood temporarily for fire-escape instruction.

The number of men leaving every year is now about 70 or 80, and consequently it is a matter of most urgent importance to have a proper place of instruction for a corresponding number of new hands. It is also of great importance that the place of instruction should be in the immediate vicinity of the head quarter station, in order that I may be able to superintend the instruction personally.

I trust the committee may be pleased to give orders on this subject as soon as possible, as until something is done, the instruction of the young hands is unavoidably stopped.

(signed) *Eyre M. Shaw*,
Chief Officer, M. F. B.

EXTRACT from Fire Brigade Committee Minutes, 2 March 1869 (No. 5).

Chief Station, Watling-street, London,
1 March 1869.

I have to report that the following table shows the arrangement at each station as I have adapted the rooms for married and single men respectively, and also the number of men lodging out, distinguishing married men from single, and the weekly rent of the several lodgings.

It may be that on the perusal of this return the committee may be of opinion that in some cases the men are too much crowded in the houses, but I beg to state that I have acted in the matter according to the best of my judgment, keeping in view the actual accommodation required for each family, large and small, and for the sake of economy, in all cases avoiding as far as possible putting out any man into lodgings except when absolutely necessary.

(signed) *Eyre M. Shaw,*
Chief Officer, M. F. B.

TABLE showing the Present Arrangement at each Station for Married and Single Men respectively; also the Number of Men Lodging Out, and Cost of same.

Number.	STATION.	Number of Rooms at Station.	Number of Men Living in Station.		Number of Men Living out of Station.		Amount Paid per Week for Men Living Out.		
			Married.	Single.	Married.	Single.	£.	s.	d.
2	Westminster	20	5	6	–	–		—	
3	Horseferry-road	2	1	–	7	–	2	9	–
5	Brompton	8	2	3	5	–	1	14	6
6	Fulham	3	1	3	–	–		—	
7	Kensington	3	1	–	3	–		15	6
8	Hammersmith	3	1	2	2	–		13	–
9	Bayswater	3	1	–	1	2		10	–
10	Notting-hill	–	–	–	4	–	1	2	6
11	Paddington	4	1	4	2	–		12	6
12	St. John's Wood	3	1	–	6	–	1	9	6
13	Hampstead	–	–	–	1	2		9	–
14	Baker-street	3	1	–	2	6	1	10	6
15	Portland-road	10	3	7	–	–		—	
16	Regent-street	6	1	5	2	2		17	–
17	Highgate	2	1	–	5	–	1	12	–
18	Farringdon-street	18	5	8	4	–		14	–
19	Islington	17	7	4	–	–		—	
22	St. Luke's	21	6	6	–	–		—	
23	Watling-street	13	5	10	–	–		—	
24	Chandos-street	8	3	6	3	–		19	–
25	St. Giles's (Crown-street)	3	1	–	6	3	1	19	6
26	Holborn	12	4	6	3	–		15	6
27	St. Pancras	8	3	–	2	–		11	–
30	Wellclose-square	19	6	7	–	–		—	
31	Bethnal-green	5	1	3	3	–		14	6
32	Hackney	1	–	2	2	–		10	–
33	South Hackney	3	1	–	2	–		10	–
34	Stoke Newington	5	1	3	–	–		—	
35	Mile End	6	1	2	2	–		8	–
36	Bow	4	1	3	–	–		—	
37	Ratcliff	9	3	3	4	–		17	6
38	Poplar	14	5	3	–	–		—	
40	Bishopsgate	10	4	6	2	–		14	–
41	Shoreditch	12	5	3	–	–		—	
42	De Beauvoir Town	–	–	–	4	–	1	1	–
43	Whitechapel	2	1	–	5	–	1	12	6
44	Kennington	5	1	2	3	6	1	6	6
45	Southwark	23	7	6	–	–		—	
46	Tooley-street	21	7	5	–	–		—	
47	Rotherhithe	8	4	3	4	–		14	3
48	Old Kent-road	9	3	4	–	–		—	
50	Woolwich	3	1	2	–	–		—	
51	Greenwich	4	1	3	1	–		4	6
53	Lewisham	3	1	2	–	–		—	
54	Camberwell	7	2	3	–	–		—	
56	Brixton	7	2	1	–	–		—	
57	Clapham	4	1	2	–	–		—	
58	Wandsworth	1	–	2	1	–		5	6
60	Waterloo	13	6	4	–	–		—	
	TOTAL	368	119	144	91	21	27	12	3

(signed) *Eyre M. Shaw,*
Chief Officer, M. F. B.

Appendix, No. 11.

PAPER handed in by Mr. *De la Hooke.*

Appendix, No. 11.

REPORT of Sir *J. W. Bazalgette*, February 1876.

Metropolitan Board of Works,
Engineer's Department, Spring Gardens,
1 February 1876.

In pursuance of the instructions of the Sub-Committee I have ascertained the pressure of water as it stands in the London Water Companies' mains and pipes in a large number of instances. The observations might be multiplied, but 500 have been taken, which will probably be sufficient to give a general idea of the pressure through the metropolis.

The observations have been made with a pressure gauge applied generally to the stand posts or hydrants in use for watering the roads, but in many cases, especially where the water is supplied by meter, the water has been cut off from them for the winter season and the meters removed, and in such cases the observations could not be made.

In some districts, however, where this was the case, we have been able to obtain the pressure from the pipes from which water is supplied for cleansing the urinals. In some other cases the frost has prevented our operations.

One great cause of difficulty and delay in making these experiments has arisen from the great want of uniformity in the size of the unions and the variety of threads of the screws, almost every district and every company adopting a different gauge.

The experiments have been taken in the day-time, but in a few instances a second observation has been taken after midnight.

The results of the observations have been laid down on the map, and I have prepared a tabular statement to show roughly the pressures obtained in reference to the several elevations above Ordnance datum.

Although the ascertained pressures appear in many cases to be sufficient for the purposes of extinguishing fires, yet the maintenance of such pressures could not, with any certainty, be relied upon in cases of fire, even if it be assumed that the pressure ascertained on the particular occasion of the experiment were that generally prevailing, for the experiments lasted for only a few minutes and were the result of a dead pressure, no water being drawn off at the place of observation, as there would be in the case of its use for extinguishing fire. It is very probable that if a large quantity of water were drawn off continuously for any considerable period of time, the pressure would fall very considerably, and the supply fail. The maintenance of the pressure, under such conditions, depends not only upon the head, but also upon the size of the pipes conveying the water from source of supply, upon the distance of the point from which the water is drawn off from the same source, upon the quantity of water drawn off, and upon the circumstance of water being drawn off at other points along its route. Under any circumstances a portion of this head will be used in overcoming the friction of the water in the pipes when it is set in motion, and if the pipes are small or their length great, a large proportion of the head will be consumed in overcoming the friction, and little or none left for propelling the water from its outlet. Now we have no means of ascertaining any of those conditions; we cannot learn the size of the pipe at the point of delivery, or the source from which the water is supplied, much less the length and size of the several pipes by which it is conveyed, all of which are essential elements in the problem. Even if these points were known the partial closure of a valve in the line of communication would falsify any deduction from these premises, although none of these conditions would affect the pressure of a standing head which is that ascertained by our experiments.

In some of our observations the oscillations of the gauge would seem to indicate that the water was being supplied direct from the engines, and if so, it would be liable to fluctuations by the variation in the action of the pumps, which are probably not kept at work during the night, and if under such conditions large qnantities of water were drawn off the supply would rapidly fail. In other instances the experiments show a steady pressure, and this would indicate connection with a reservoir, but no one but the companies themselves have the means of knowing the facts.

The ascertained pressures as tabulated do not, even in the same company's district, show the sympathy with the variation of the level of the surface which would be naturally expected, and this also would indicate the existence of some exceptional conditions of which we are not aware.

To have made the experiments practically useful, we should have drawn off large quantities of water for a lengthened period, but this, under the conditions of our observations, was impossible. It would also have been desirable to have taken observations by day and night, but this would have been attended with some difficulties, for it is necessary to obtain the

the assistance of an officer of the several district boards to accompany the party taking the observations to point out the position of the standposts or hydrants and to turn on the water, and special arrangements would have to be made to secure his services at night. It is probable that in some instances the pressure is reduced, and in others increased at night, but as far as our limited observations go, which have been confined to 39 observations in the Kent Company's district, the majority show a higher pressure, and there are only two observations where the pressure is altogether lost, and a third where it is very much reduced.

(signed) *J. W. Bazalgette*,
Engineer.

TABULAR STATEMENT referred to in the REPORT of Sir *J. W. Bazalgette*, dated 1st February 1876.

WATER PRESSURES as ascertained by Gaugings taken in various Parts of the Districts of the several Metropolitan Water Companies, arranged with reference to the Altitudes of the several Places above Ordnance Datum.

The Pressures are stated in lbs. per Square Inch.

Above Ordnance Datum. Feet.	KENT WATER COMPANY.	SOUTHWARK AND VAUXHALL WATER COMPANY.
20	45 to 55. 60 to 65. 40 to 50. 51 to 56. 46 to 50. 44 to 45. 50 to 55 and 60. 39 to 41. 30 to 35. 28. 31. 51 to 57. 26 to 38. 51 to 55. 42. 39. 17. 20. 60. 61. 60. 62.	40. 42 to 44. 32. 16. 25. 48. 42. 48. 22 to 24. 22 to 24. 19. 4. 14. 10. 36. 37 to 39. 25 to 35. 20. 35 to 45. 36.
40	18 to 10. 50. 44. to 45. 17. 44 to 45. 55. 48 to 54. 50. 38 to 42. 54 to 58. 60 to 70. 40 to 45. 58 to 62. 24. 39. 58 to 62. 55 to 60. 44 to 54. 45. 55. 51.	25. 14. 35 to 42. 24 to 28. 35 to 45. 26 to 36. 4. 35 to 45. 40 to 50. 35 to 50. 15. 13.
60	55 to 60. 87. 18. 17 to 18. 5. 48. 60 to 70. 39 to 48. 42 to 52.	12 to 24. 20 to 25. 12 to 24. 25 to 35. 20. 2. 6.
80	55 to 65. 68 to 67. 48 to 50. 14 to 16. 32. 44.	30. 12 to 18.
100	34. 50.	16. 20 to 25.
150	65 to 78. 50. 47 to 50. 35 to 55. 28 to 35. 25 to 35. 35 to 40. 33. 33 to 35. 33. 28.	4. 15 to 10.
200	29. 12. 27. 26. 27. 30. 33. 31.	
250	42. 30.	
	LAMBETH WATER COMPANY.	NEW RIVER WATER COMPANY.
20	65 to 80. 34. 24. 22. 34. 20 to 22. 20. 28. 26. 20. 25. 24. 26. 12. 29. 28. 35. 40. 40. 32. 28. 36.	
40	11. 16. 13. 15. 18.	10. 33 to 32. 31.
60	15. 120 to 123. 8. 118 to 120. 52.	28. 32. 25. 31. 33. 35. 31. 35. 28. 33. 23. 36. 28. 26 to 25. 19. 44 to 55. 54 to 56. 24. 25. 45 to 39. 20.
80	130 to 140. 30 to 40.	53. 40 to 41. 29 to 32. 24. 51. 28. 7. 29. 25. 34. 16. 25. 42 to 48. 45 to 50. 51. 15. 31 to 33. 37 to 32.
100	15. 88. 110 to 112. 84. 76. 85. 32. 30. 26. 24. 36. 37. 29. 26. 27. 38. 28. 26. 35. 30. 21. 60 to 70. 40. 25. 48. 49. 42.	35. 39. 30. 28 to 30. 55 to 58. 48 to 52. 38 to 40. 45. 44 to 45. 45. 43. 45. 36. 32. 40. 40 to 44.

Appendix, No. 11.

Above Ordnance Datum.	Lambeth Water Company—*continued.*	New River Water Company—*continued*
150	12. 32. 5. 53. 72. 16. 18. 37. 7. 28.	23. 25.
200	3. 7. 70 to 75. 79 to 81. 69 to 71. 5. ½. 78. 55. 7. 30. 6.	
250	50 to 57. 38 to 40. 52.	
300	30 to 58. 47.	
350	5 38. 23. 15. 5. 12.	
	Grand Junction Water Company.	**West Middlesex Water Company.**
20	14½. 37. 43. 27. 50. 30 to 31.	40. 42. 35. 12.
40	41. 34½. 39. 44. 37.	33. 23. 28. 50. 37.
60	27. 50. 30 to 40. 12 to 16. 24 to 26. 16 to 17. Two Trials.	35 to 38. 37.
80	17½. 32 to 25. 25 to 28. 24. 23. 29. 22. 17. 15. 40 to 47. 24 to 25. 23. 17. 17 to 19. 24 to 26. 24 to 26. 17 to 18. 17 to 18.	29 to 32. 25 to 26. 31 to 34. 24 to 26.
100	37. 21 to 23. 49 to 51. 25 to 27. 43 to 54. 25. 41 to 45. 33. 22 to 23. 24 to 25.	17. 21. 11 to 12. 29. 17 to 18 25 to 27. 15 to 25. 25. 30. 20 to 22.
150	5. 20 to 23.	
	Chelsea Water Company.	**East London Water Company.**
20	25. 33 to 32. 30. 26. 54 to 55. 37. 25. 27. 35 to 33. 38 to 39. 33. 40 to 41. 38.	16. 12 to 13. 16 to 18. 18 to 20. 22 to 25. 22. 16. 16 to 17. 22. 25. 15. 10 to 20. 30. 20 to 30. 15 to 25. 30 to 40. 25 to 35. 15 to 20. 22. 28.
40	25.	18 to 23. 20. 23. 22. 20. 23. 21 to 23. 18 to 22. 5 to 35. 18 to 22. 14. 18. 15. 14. 20. 16 to 19. 22 to 25.
60	- - - - - - - -	8. 10.

METROPOLITAN BOARD OF WORKS.

REPORT by the Accountant on a SUPERANNUATION FUND for the FIRE BRIGADE.

FIRE BRIGADE SUPERANNUATION FUND.

To the Sub-Committee of the Works and General Purposes Committee.

YOUR Sub-Committee has instructed me to report on the Scheme submitted by Mr. Thompson, and to bring up any proposal I may, after due inquiry, think it desirable to submit.

The reference by the Works and General Purposes Committee contemplates the establishment of a superannuation fund, to be based upon contributions from the men. I presume, therefore, your sub-committee wishes for information to assist in determining—

I. As to the scale of pensions.
II. As to the rate of contributions.
III. How best, in the interests of the Board and of the brigade, to initiate the fund.

I will append to this report some particulars as to superannuation funds in existence in connection with the City and the Metropolitan Police, and the Manchester and Liverpool Fire Brigades, and it will be from these statements I shall quote figures as I proceed. [*These Papers are not printed.*]

I. *As to the Scale of Pensions.*—Men become disabled either from ill-health or injury. With reference to those disabled from ill-health, the questions which need decision are—

After what term of service shall men be first entitled to a pension?
After what term shall they be entitled to the maximum amount of pension, and
What shall be the scale?

In the City Police no man is entitled to a pension under 15 years' service; the maximum is allowed after 20 years, and the scale is half-pay for a service of from 15 to 20 years, and two-thirds of the pay after 20 years.

In the Metropolitan Police no man is entitled to a pension under 15 years' service; the maximum is allowed after 28 years, and the scale is from 15-50ths after 15 years' service to two-thirds after 28.

In the Manchester Fire Brigade a man is entitled to a pension of one-fourth of his pay after 10 years; from one-fourth to one-half after 15 years, and from three-eighths to two-thirds after 20 years.

In the Liverpool Fire Brigade the scale is something similar.

The officers and men of the Metropolitan Fire Brigade submit the grant of a pension of 10-40ths after 10 years' service, an additional fortieth for each additional year's service up to 25, when the maximum of 25-40ths would be reached.

Mr. Thompson has suggested 10-40ths after 10 years' service, an additional fortieth for every two years' additional service, the maximum to be attained after 30 years' service, and not to exceed half-pay.

The chief officer of the brigade can probably inform you as to the average term of service after which a man may be said to be unfit for duty, and this may determine the period at which the maximum pension should be granted.

The following table reducing each scale to fortieths may be useful :—

Appendix, No. 11.

PENSIONS IN FORTIETHS OF EFFECTIVE PAY.

No. of Years' Service.	Fire Brigade.		City Police.	Metropolitan Police.	Manchester Fire Brigade.	Liverpool Fire Brigade.
	Mr. Thompson's Proposal.	Proposed by Brigade.				
10 - -	10	10	- -	- -	10	10 to 15
11 - -	10	11	- -	- -	"	"
12 - -	11	12	- -	- -	"	"
13 - -	11	13	- -	- -	"	"
14 - -	12	14	- -	- -	"	"
15 - -	12	15	20	12	10 to 20	15 to 20
16 - -	13	16	20	12·8	"	"
17 - -	13	17	20	13·6	"	"
18 - -	14	18	20	14·4	"	"
19 - -	14	19	20	15·2	"	"
20 -	15	20	26·66	16·	15 to 26 66	20 to 26·66*
21 - -	15	21	"	17·4	"	"
22 - -	16	22	"	18·8	"	"
23 - -	16	23	"	20·2	"	"
24 - -	17	24	"	21·6	"	"
55 - -	17	25	"	23	"	"
26 - -	18	"	"	24·4	"	"
27 - -	18	"	"	25·8	"	"
28 - -	19	"	"	26·66	"	"
29 - -	19	"	"	"	"	"
30 - -	20	"	"	"	"	"

* Stipulation as to age, "provided the age be not under 52 years, if below the rank of Superintendent, and 55, if of or above that rank."

The foregoing relates to men disabled from ill-health. There are other cases to be considered.

1. *Men disabled by Injury.*—In the City and Metropolitan Police each case is considered on its merits, and a pension is granted not exceeding full pay; but in the latter force there is a lower scale for accidental injuries, not wholly incapacitating. At Manchester a pension equal to 3-8ths of the pay is granted, and at Liverpool 2-3rds.

These cases are few in the Metropolitan Fire Brigade, there being only one from 1866 to 1874, and it would probably be satisfactory to leave the Board to decide in each case how much additional pension shall be granted beyond the amount to which the person would have been entitled if superannuated from ill-health.

2. *Widows and Children.* — The Brigade propose a grant of 5-8ths of the rate of pay to the widow or surviving children of a man killed on duty. In the Manchester Brigade 1-4th is allowed, and in the City and Metropolitan Police forces each case is considered on its merits. It would probably be satisfactory that the widow or children should receive the equivalent of the superannuation allowance to which the fireman would have been entitled if pensioned from ill-health, with any additional sum the merits of the case may deserve.

3. *Men who have Served too short a Time to be entitled to a Pension.*— The general rule is one month's pay for each year of service.

An important question arises as to whether a man shall be entitled to a pension irrespective of his state of health. The brigade suggest that any member, after 25 years' service, shall be allowed to retire on pension. In neither the City nor the Metropolitan Police is this the practice, but in Manchester and Liverpool it appears to be partly so; and at Liverpool there is this regulation: "Any officer or constable (the fire brigade and constabulary are one force) entitled to superannuation, and able and willing to continue in the service, shall, in addition to his full pay, be entitled to a yearly sum in proportion to his pay."

II. I would now proceed to the second part of the subject, namely, what rate of contribution shall be levied on the men?

The men propose 2 per cent.
The City and Metropolitan police contribute 2½ per cent.
Mr. Thompson proposes from 2½ to 3 per cent.
At Manchester it is 3 per cent.
At Liverpool 3½ per cent. for the higher ranks and less for the lower.
It cannot be expected that the men's contributions alone can cover the charge for pensions.

The

The experience of the Metropolitan and City Police superannuation funds confirms this. In both these instances, notwithstanding the augmentation of the funds by miscellaneous receipts, Acts of Parliament have been obtained to charge the deficiency of the superannuation funds on the general resources of the police. In the City police, with a force of 702 men, the pensions in 1872 amounted to 4,658 *l.*; the deductions from men's wages amounted to 1,288 *l.*; other receipts from fines, sale of old clothing, &c., produced 1,406 *l.*; and the remainder was provided by the sale of accumulated investments. The deductions and the pensions in the City police for 10 years up to 1872, were as follows:—

	Deductions from pay at 2½ per Cent.	Charge for Pensions.
	£.	£.
1863 - - - - -	841	2,523
1864 - - - - -	848	2,889
1865 - - - - -	996	3,488
1866 - - - - -	1,129	3,979
1867 - - - - -	1,160	4,100
1868 - - - - -	1,212	4,195
1869 - - - - -	1,206	4,537
1870 - - - - -	1,211	4,200
1871 - - - - -	1,208	4,104
1872 - - - - -	1,289	4,659

In the Metropolitan police the proportion of charge to deductions was larger.

Whatever be the rate of deduction, I am afraid your Sub-Committee will hardly entertain the suggestion that any member who has subscribed to the pension fund and left the service, not having obtained a pension, shall be entitled to receive back the amount he has subscribed to the fund. It will be obvious that in all pension funds some, even of those who arrive at a pension, lose more than they gain. One man dies, say, a year after he is pensioned; it would be as fair that his family should receive back some of his contributions as that a person who withdraws from the force should receive back his. A pension fund is an insurance, and so long as a man is in the service he may feel that he is protected by a provision in case of sickness or disablement, and for this insurance he pays a fixed rate per annum, whether he ever receives any benefit or no.

It would of course simplify the keeping of accounts very much if the wages of the men were reduced 2 or 2½ per cent., and there were no special superannuation fund, nor weekly deductions from wages. By this plan the Board would also prevent any feelings of discontent in men joining the brigade at being compelled to contribute to a fund from which they expected no great benefit. It may be suggested that a rate of weekly wages looks larger if stated in gross, but practical men look at the net amount they receive, and the Board could always in its own accounts state the wages at both gross and net. I believe in the City force the term "net wages" is often used, and an idea even prevails that the men do not pay any contribution towards pensions, but that the Corporation pay them. This, however, is not so; the deductions are regularly made in the police books, and the amount paid to the men is called "net" wages.

It is well, perhaps, to remind your Sub-Committee that the two men now in receipt of pensions (Perkins and Martin) paid no contribution, and on the other hand they received less pension than the men now looked for.

III. The third matter for consideration is, how best, in the interest of the Board and the brigade, to initiate the arrangements, and whether men who have served a good many years shall pay anything out of their savings' fund, in consideration of the scale of pensions to which they will become entitled. Mr. Thompson suggested that the balance of the savings fund shall be carried to the pension fund, and I do not know that there would be any hardship in this, although the men have not yet assented to it; they state that some portion of the fund does not consist of savings, and this can be looked into.

The proposition that no person shall be pensioned for a certain time appears to me impracticable. Simultaneously with the institution of the fund (if fund there be), the men who contribute should be entitled, in case of illness, to claim a retiring pension.

The cost to the Board of a firemen's pension scheme will probably not be considerable.

Appendix, No. 11.

The number of men in receipt of a pension in the City Police during the last 10 years is as follows:—

	Constables in the Force.	Constables in Receipt of Allowances.
1864 - - - - -	626	70
1865 - - - - -	634	93
1866 - - - - -	676	89
1867 - - - - -	687	93
1868 - - - - -	711	95
1869 - - - - -	700	91
1870 - - - - -	699	91
1871 - - - - -	697	83
1872 - - - - -	702	114
1873 - - - - -	772	131

Supposing there were eventually a pension list of one-eighth of the brigade, or 50 men, *i.e.*:—

2 Superintendents.
16 1st Class Engineers.
16 2nd Class Engineers.
16 1st Class Firemen.

And the pensions amounted to five-eighths of effective pay, and all the men contributed $2\frac{1}{2}$ per cent., the net charge would be 2,365 *l.*, but this charge would not probably arise for some years.

Arthur Gunn,
Accountant.

Spring Gardens, 2 March 1875.

Appendix, No. 12.

PAPERS handed in by Mr. *Richardson*, 15 June 1876.

TABLE showing the Proportion of Pay, which a Member of the Fire Brigade would Receive as Pension, if incapacitated after various Terms of Service under the Three Schemes hereunder mentioned.

	Board's Scheme.		Police Scheme.		Men's Scheme.	
		£. s. d.		£. s. d.		£. s. d.
After 10 Years' Service -	Rate per Cent. of Pay.	16 13 4	Rate per Cent. of Pay.	Nothing under 15 years' Service.	Rate per Cent. of Pay.	25 – –
„ 11 „ „ -	„	18 6 8	„		„	27 10 –
„ 12 „ „ -	„	20 – –	„		„	30 – –
„ 13 „ „ -	„	21 13 4	„		„	32 10 –
„ 14 „ „ -	„	23 6 8	„		„	35 – –
„ 15 „ „ -	„	33 6 8	„	30 – –	„	37 10 –
„ 16 „ „ -	„	35 – –	„	32 – –	„	40 – –
„ 17 „ „ -	„	36 13 4	„	34 – –	„	42 10 –
„ 18 „ „ -	„	38 6 8	„	36 – –	„	45 – –
„ 19 „ „ -	„	40 – –	„	38 – –	„	47 10 –
„ 20 „ „ -	„	41 13 4	„	42 – –	„	50 – –
„ 21 „ „ -	„	44 3 4	„	46 – –	„	52 10 –
„ 22 „ „ -	„	46 13 4	„	50 – –	„	55 – –
„ 23 „ „ -	„	49 3 4	„	54 – –	„	57 10 –
„ 24 „ „ -	„	51 13 4	„	58 – –	„	62 – –
„ 25 „ „ -	„	54 3 4	„	60 – –	Maximum -	62 10 –
„ 26 „ „ -	„	56 13 4	„	62 – –	—	—
„ 27 „ „ -	„	59 3 4	„	64 – –	—	—
„ 28 „ „ -	„	61 13 4	Maximum -	66 13 4	—	—
„ 29 „ „ -	„	64 3 4	—	—	—	—
„ 30 „ „ -	Maximum -	66 13 4	—	—	—	—
Proposed Contributions of the Men - - -	- - 3 per Cent. - -		- - 2½ per Cent. - -		- - 2½ per Cent.	

Length of Service of Men leaving the Brigade.

Year.	1 Week.	2 Weeks.	3 Weeks.	4 Weeks.	5 Weeks.	6 Weeks.	Over 6 Weeks and not exceeding 3 Months.	Over 3 Months and not exceeding 6 Months.	Over 6 Months and not exceeding 1 Year.	Total not exceeding 1 Year.	Over 1 Year and not exceeding 2 Years.	Total not exceeding 2 Years.	Total Number of Men leaving the Service.
1866 -	–	–	–	–	1	–	4	2	4	*11*	–	*11*	26
1867 -	–	–	–	–	–	–	1	4	5	*9*	9	*18*	23
1868 -	–	–	2	–	5	–	2	7	4	*20*	12	*32*	46
1869 -	–	2	2	–	–	–	1	1	12	*18*	12	*30*	75
1870 -	–	–	–	1	1	–	4	7	19	*32*	23	*55*	92
1871 -	–	1	–	2	–	2	8	10	17	*40*	13	*53*	77
1872 -	–	2	–	–	–	–	1	1	15	*19*	15	*34*	52
1873 -	–	1	1	2	2	–	6	13	13	*38*	13	*51*	71
1874 -	–	2	2	4	5	2	9	4	11	*39*	12	*51*	80
1875 -	2	2	1	–	–	1	3	4	7	*20*	9	*29*	68
	2	10	8	9	14	5	38	53	107	*246*	118	*364*	610

Appendix, No. 13.

PAPERS handed in by Mr. *Richardson*, 19th June 1876.

— No. 1. —

FIRE BRIGADE SUPERANNUATION.

STATEMENT showing the Amount Contributed by the First and Last Man in each Class, and the Annuities they would be entitled to under Board's Scheme, if it had been Accepted.

NAME.	Date of Appointment.	Length of Service.	Amount brought in, January 1866.	Added since; 6*d.* per Week, and Interest Accumulated.	At present in Credit, May 1866.	Subscription of 6*d.* per Week from Date of Appointment to 5 July 1865.	Amount to be paid to entitle Men to Benefit by Superannuation Fund.	Annuity entitled to under Board Scheme on Retirement, if 60 Years of Age, if under, on being Invalided.	—
			£. s. d.	£. s. d	£. s. d.	£. s. d.	£. s. d.	£. s. d.	
Superintendents:									
Bridges, J. C.	Dec. 1837	38½	33 5 3	24 2 7	57 7 10	35 17 –	59 19 7	133 6 8	Maximum.
Palmer, J. E.	Mar, 1854	22¼	15 7 –	19 11 6	34 18 6	14 13 –	34 4 6	93 6 8	Increasing year by year.
Engineers, 1st Class.									
Flinn, W.	July 1838	38	40 12 –	26 2 4	66 14 4	35 1 –	61 3 4	84 18 8	Maximum.
Fogden, S.	April 1860	16	7 8 –	17 10 9	24 18 9	6 14 6	24 5 3	44 11 9	Increasing.
Engineers, 2nd Class:									
Williams, H.	June 1860	16	7 5 6	17 10 1	24 15 7	6 10 –	24 – 1	38 4 5	- ditto.
Arnold, C. B.	May „	16	4 8 –	14 8 –	18 16 –	6 12 –	21 – –	38 4 5	- ditto.
Firemen, 1st Class:									
Morgan, G.	June 1861	15	5 18 –	17 2 9	23 – 9	5 4 –	22 6 9	30 6 8	- ditto.
Harwood, H.	Oct. 1859	16½	8 2 –	17 12 8	25 14 8	7 9 –	25 1 8	31 17 –	- ditto.
Firemen, 2nd Class:									
Young, R. H. W.	Feb. 1866	10¼	- -	- -	15 8 8	- -	15 8 8	13 13 –	- ditto.
Pooley, N.	July 1869	7	- -	- -	9 16 4	- -	9 16 4	- - -	No annuity under 10 years' service.
Firemen, 3rd Class:								One month's pay for every year of service.	
Buckland, G.	Aug. 1868	7¾	- -	- -	11 6 9	- -	11 6 9	- - -	- ditto.
Glover, W. R.	Aug. 1873	2¾	- -	- -	3 13 –	- -	3 13 –	- - -	- ditto.

— No. 2. —

METROPOLITAN BOARD OF WORKS.

FIRE BRIGADE ACT, 1865.

MEMORANDUM by the SUPERINTENDING ARCHITECT, as to the Means of Providing FIRE-PLUGS in the METROPOLIS, with FURTHER SUGGESTIONS by Captain *Shaw*, Chief Officer of the Metropolitan Fire Brigade, and CORRESPONDENCE with WATER COMPANIES.

CONTENTS.

	PAGE
1. Memorandum by Superintending Architect as to Fire-Plugs, dated 29th June 1866	663
2. Note as to Water Supply of the Metropolis, dated 17th July	665
3. Remarks and Suggestions by Captain Shaw, M.F.B., dated 17th July	665
4. Report by Captain Shaw as to Water Supply at Fires, dated 25th June	667
5. Extracts from Replies to Captain Shaw's Report, by Water Companies	667
1. Southwark and Vauxhall Water Company	667
2. Grand Junction Water Company	668
3. Chelsea Water Works Company	668
4. New River Company	669
5. Lambeth Water Works Company	670
6. East London Water Works Company	670
7. West Middlesex Water Works Company	670
8. Kent Water Works Company	671

METROPOLITAN BOARD OF WORKS.

Superintending Architect's Department, 29 June 1866.

MEMORANDUM as to the Means of providing FIRE-PLUGS in the METROPOLIS.

The Metropolis Fire Brigade Act of 1865 provides by Section 32, as follows:—

1. All powers exercised by any local body or officer within the Metropolis, as respects fire-plugs, are to be exercised by the Board.

2. The Board are entitled to receive copies or extracts of all plans kept by any Water Company, under the Water Supply Act of 1852.

3. Every Water Company is to provide, at the expense of the Board, in any mains or pipes, plugs for the supply of water in case of fire, at such places, of such dimensions, and in such form as the Board may require for the use of the Brigade.

4. Keys of all fire-plugs are to be deposited by Companies at places appointed by the Board.

5. The Board may put up on any house or building, a public notice, in some conspicuous place in each street in which a fire-plug is situated, showing its situation.

Transferred Powers of Local Bodies.

Under the first head above stated there were two sorts of authorities who had powers over plugs.

The churchwardens in every parish within the bills of mortality, and certain large parishes, and the overseers of the poor where there were no churchwardens, were required

Appendix, No. 13.

under the Building Act clauses which were enacted in 1774, and only repealed in 1865 by the Fire Brigade Act, "from time to time for ever to make, place, and fix, at the charge of each parish to which that Act applied, upon the mains and pipes of any waterwork whatsoever, such and so many stop-blocks of wood, with a wood plug, of such and so many fire-cocks, to go into each main or pipe, and to be placed at such distances in each and every street or place as they direct;" and they are also empowered to mark houses and keep keys in every such house, &c. But on any removal, change, or alteration being made of mains or pipes, the expense of fixing new stop-blocks, plugs, and fire-cocks is to be borne by Water Companies.

By the General Paving Act of 1817, the surveyors of pavements have powers to inspect plans, &c., of water pipes, and take copies; and the surveyors may require pipes, stop-cocks, and plugs to be repaired. This Statute became applicable to the whole metropolis by the amending Act of 1862.

By the Waterworks' Clauses Act of 1847, which now applies to all the metropolitan companies by incorporation with their special Acts, provision is made for fixing proper fire-plugs in the main and other pipes at convenient distances, or not more than 100 yards from each other, and at proper and convenient places for extinguishing fire. The Companies are bound to repair such plugs and supply keys at each engine-house, or as may be appointed by local authority, and to affix notices in streets.

The expenses to be paid by local bodies.

Where fire-plugs are fixed, the supply of water is to be kept on for extinguishing fires, except under certain unavoidable circumstances.

Maps, &c.

The Water Companies Act of 1852 requires every Company to keep a corrected map of mains, &c., to a scale of not less than six inches to a mile, and to permit copies or extracts; and the Board are, by the Fire Act, empowered to obtain such copies.

It will probably be found that the Water Companies have not fully complied with the requirements of the law, and that correct maps are unattainable. It will therefore be a work of time, and the imperfect maps must first be taken. Perhaps some joint arrangements might be made.

State of Plugs.

After it is ascertained where the plugs exist and how they are marked, it will be necessary to determine convenient places for increasing the number.

This will be a work of great labour in respect of the number of plugs and the distances to be traversed.

The arrangements for general and special services are somewhat complicated. Along main-trunk pipes there are stopcocks worked by screws at every street junction on the pipes for the cross streets, and occasionally on the mains. There are other pipes for street service along the sides of main streets, and running parallel to trunk mains, upon which stopcocks are also placed. The fire-plugs occur at intervals between such stopcocks. Hence the stopcock at the end of a street or other interval must be open before water can flow at any fire-plug in a street; and if the main is not also regulated, the subsidiary supply is wanting. (*See* sketch plan annexed.)

At present the indications, both on houses and in the streets, are imperfect, and some inquiry as to the practice elsewhere might be useful.

The older markings are by [F.P. ft. 24], and the modern ones [F.C. ft. 24], where a fire-cock is used instead of a plug; but in general the marks are of a dark colour instead of being a white ground and dark letters, and they are placed rather too high for being easily seen at night. It might be considered whether the gas lamp-posts might be marked as well as the houses.

A sort of indented brick or tile might readily be made in good clay so as to have a stock of all sorts of numbers of feet, from 9 to 20 or 30, and ready prepared for fixing; thus to enable a workman to affix them speedily with cement or holdfasts at the required places. This would be better than painting, except on stone or public buildings where defacement should be avoided.

Mode of Working.

Probably the most practical way of operating to correct existing marks and inspect plugs, as well as to extend their number, would be to establish an inspection.

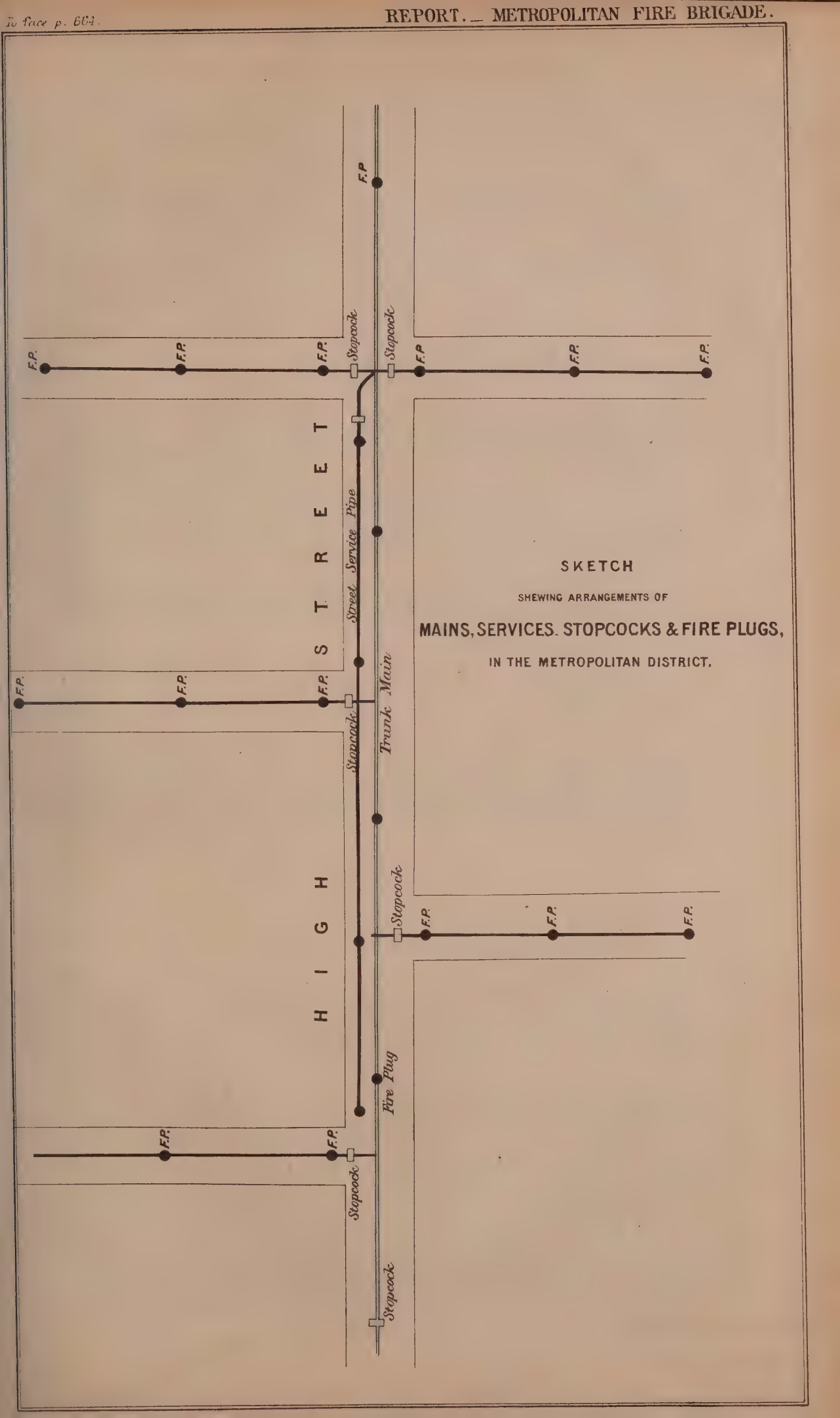
If the aid of the turncocks of the Water Companies were requested, the difficulty would be that these men are fully employed; and it might be objected that any interference with them or their appointed duties would occasion inconvenience to the public water supply.

Another mode would require a selected staff of workmen for the purpose, or a contract with some person who would do the work under instructions. Here, also, inspection would be required.

Extent of the Work.

There are probably 50,000 fire-plugs in the leading thoroughfares of the metropolis, and there should be one or more in every street of 200 yards in length.

Assuming that the length of the streets is from 2,000 to 2,500 miles, a considerable time will be required to render even a preliminary report. The data for forming an opinion of the cost will have to be obtained.


F.P.
F.P.
F.P.
Stopcock
Stopcock
F.P.
F.P.
F.P.
HIGH STREET
Street Service Pipe
Trunk Main
Stopcock
Stopcock
F.P.
F.P.
F.P.
Stopcock
F.P.
F.P.
F.P.
Fire Plug
Stopcock
Stopcock
SKETCH
SHEWING ARRANGEMENTS OF
MAINS, SERVICES. STOPCOCKS & FIRE PLUGS,
IN THE METROPOLITAN DISTRICT.

In the evidence on fires in 1862 it is assumed, in a question put to a witness, that the repairs of plugs, &c., cost the Companies from 300 *l.* to 400 *l.* yearly.

Proposals.

I would beg to recommend, as follows:

1. The Water Companies should be required to show what maps, &c., they possess, according to the Statutes.

2. Copies of these to be obtained on Stanford's map, or any recent parochial maps.

3. The expense of forming plugs to be ascertained, according to different forms, and the most useful modes.

4. The practice of other places to be known both as to plugs and marks.

(signed) *George Vulliamy.*
Superintending Architect.

17 July 1866.

Note.—On perusing the Report of Captain Shaw, which is annexed hereto, I would beg to observe, that undoubtedly the deficiencies of the Metropolitan Water Supply will be felt the more that the Fire Brigade system is improved. Yet in considering the water-plugs, the extension of view to the water supply in all its bearings, appeared to be not immediately embraced in the reference. I acknowledge, however, the great importance of Captain Shaw's views.

A plan has been suggested to the public by Mr. Bateman, C.E., which appears to be efficient and capable of future increase, and proposes to derive a pure and plentiful supply of water from the mountains in North Wales, 183 miles from the metropolis, and that is the nearest point at which a sufficient and constant supply can be obtained. He gives estimates of the expenses which are necessarily heavy, but may not be beyond the powers of the metropolis to bear, considering how much the companies have already expended since 1852 in trying to improve an inadequate supply. When the subject is properly inquired into, and managed as the necessities of the metropolis require, a large surplus income from water rates may be available.

An improved supply could be brought to Stanmore Service Reservoirs, by gravitation at a height of 250 feet above Trinity high-water mark. At present, the Water Companies use a nominal steam power, equal to 10,970 horses to pump water. They supply intermittently, 470,000 houses with 108,500,000 gallons daily, distributed through 3,290 miles of mains and branches. Their works have cost,

	£.
Prior to 1850 - - - - - - - - - - - -	4,738,878
Since 1852 for improved supply - - - - - - - - -	3,875,334
£.	8,614,212

This is the total capital upon which the ratepayers are paying dividends in the shape of water rates. These rates might be reduced to 10 *d.* in the pound for domestic purposes, and 2 *d.* in the pound as a public rate; and the reduced rates, aided by the sales of water for trading purposes, would give an income of nearly one million. The yearly cost for interest, working expenses, and payment of dividend annuities to existing Water Companies would be about 944,000 *l.*; at present, the gross revenue of the seven Companies is 702,059 *l.*; their working expenses 275,547 *l.*, and the amount actually paid in dividends and interest on borrowed money, is 404,585 *l.*

FIRE BRIGADE.

Chief Station, Watling-street, E.C.,
London, 17 July 1866.

At the Main Drainage Committee, on the 3rd of July, it was Resolved—"That the "Architect's Report on the subject of marking the position of the Fire-cocks and "Fire-plugs in the Metropolis, be referred to Captain Shaw, with instructions to add "any remarks and suggestions he may have to make, and send them into the Clerk, "in order that the same may be printed, together with the Architect's Report, and "circulated amongst the members, for their consideration."

In compliance with the above resolution, I have to report that I have carefully read the accompanying remarks of the superintending architect, concerning fire-plugs, and, while I fully agree with him in all that he has stated, I should wish to be allowed to add that the subject appears to me to be so inseparably mixed up with that of water supply, that any attempt to deal with the one without the other must of necessity prove incomplete.

I am quite aware of the magnitude of the question, the number and variety of public and private interests involved, and the great financial and mechanical difficulties which necessarily stand in the way of any change in a matter of such vast and vital importance as the supplying of water for the largest and wealthiest city in the world in sufficient quantity for domestic, manufacturing, sanitary, and other purposes; but, while fully recognising all these points, I have no option but to state my opinion frankly, that it is advisable to discontinue the existing intermittent service, which is complicated and imperfect, and requires special men to work it, and to substitute for it a constant service, with a sufficient number of proper hydrants which could be opened by anyone, and would immediately deliver water

Appendix, No. 13.

without the delay of proceeding to a distance to open certain sluice-cocks and shut a number of others in order that the whole of the available supply might flow to the required locality.

At present the regular turncocks are the only persons who understand the proper mode of working the existing water service with good effect, and I am convinced that the establishment of a constant high-pressure service will be found the only mode of overcoming the difficulties, and that any attempt to improve the present arrangements will only tend to prolong the existence of a system which, so far as fires are concerned, is most imperfect and unsatisfactory.

I am of opinion that London should be provided with a constant supply of water at a height of not less than 300 feet above high-water mark; that this supply should be from a reservoir or set of reservoirs, and that it should be obtained by gravitation alone, and thus be altogether independent of the accidents and mishaps inseparable from pumping or any other process requiring the use of complicated and uncertain machinery; that the distribution should be distinct and separate for the two sides of every street—that is to say, that the pipes should be double, not single, and should be placed either in subways or under the footways, and not under carriage roads as at present; that the pipes should be connected at the ends of the streets by short junction pieces with sluice-cocks which could be shut and opened at pleasure, in order to empty one side for repairs or to allow the whole of the water to run into either or both sides for fires or other emergencies, thus obviating the danger to which London is at present so frequently subjected whenever the water pipes are undergoing repairs; that the pipes should be laid at a depth of not less than four feet below the level of the ground in order to avoid danger from frost; that at distances not exceeding 100 feet apart, there should be attached elbow pipes which should rise in the form of fixed stand pipes or water posts to a height of four or five feet above the level of the ground, each with a command cock at the lowest possible point near the main, and each command cock being fitted with a draining apparatus, so that immediately after the valve being shut down, the elbow would become empty and consequently safe from all effects of frosts; that an outlet should be made from each of these elbows at a height of 3½ feet above the level of the ground, the remaining portion of the water post being used simply as an air vessel to steady the pressure and to ease the jar or shock caused by suddenly opening or shutting the sluice-cocks; and that the outlets should be mounted with male screws of a uniform pattern and thread with an internal water-way of 2½ inches.

Such are the modes to which the experience of the present time points as most likely to meet the general requirements, and which have, therefore, been carried out or attempted in other places.

In Hamburg these principles have been adopted for many years, although, for want of funds, the system has not yet been carried to completion; and even in those parts of the work which have been completed, a mistaken economy in the first outlay has proved a permanent source of somewhat considerable expense. I allude to the omission to continue the elbows above the level of the ground, and the consequent necessity for large and expensive paving boxes, which are difficult to find and inconvenient for use when found.

Every attempt hitherto made to mark the exact situation of fire-plugs or hydrants has proved more or less unsatisfactory, inasmuch as they have been in almost all cases placed below the ground level, and the marks have, therefore, been necessarily at some distance.

The best and simplest mode yet adopted has been the ordinary mark on a wall directly opposite, indicating the exact distance in feet and inches from the base of the wall to the opening in the pavement.

The true mark should be the hydrant or fire-plug itself, which, instead of being sunk below the level of the ground, should be elevated considerably above the pavement or footway, as before mentioned, so that one man could, without difficulty, screw on a hose and get to work at a fire in a moment, without being obliged to wait, as at present, to insert a standpipe and make all the necessary connections.

These water posts might be conveniently used as lamp-posts, or might be placed within the present lamp-post so as not to occupy any extra space, and their adoption would very materially reduce the working expenses of a Fire Brigade, inasmuch as no portable standpipes would be required; and, in point of fact, there would be at every lamp-post, or for every 10 or 15 houses, a power equivalent to that of an ordinary fire-engine always ready for immediate use.

The saving which would result from the adoption of this plan in the reduction of losses by fire is too obvious to require any comment; and, judging from what I have seen and heard of the feeling which has been steadily growing for many years, and occasionally, after heavy losses by fire, has assumed almost the form of an agitation on the subject, I cannot doubt that the time is approaching when the inhabitants of the metropolis will require some steps to be taken for the purpose of placing their water supply on a footing more in accordance with their present requirements, and with the mechanical progress of the age, than can ever be possible under the system, or rather the complication of different systems, now existing.

The experience of past and present times in providing cities with water goes to prove that the sources of supply, the nature and quantities of the supply, the storeage, the distribution, and the means of access to the water, although distinct and separate subjects when considered from certain points of view, and even forming the studies of totally different professions, are, nevertheless, completely mixed up together as essential and inseparable branches of the one great subject now under consideration; and on this account, although the

To face p. 667.

Nº 2.

HYDRANT.

AS PROPOSED BY CAPTN E.M.SHAW.

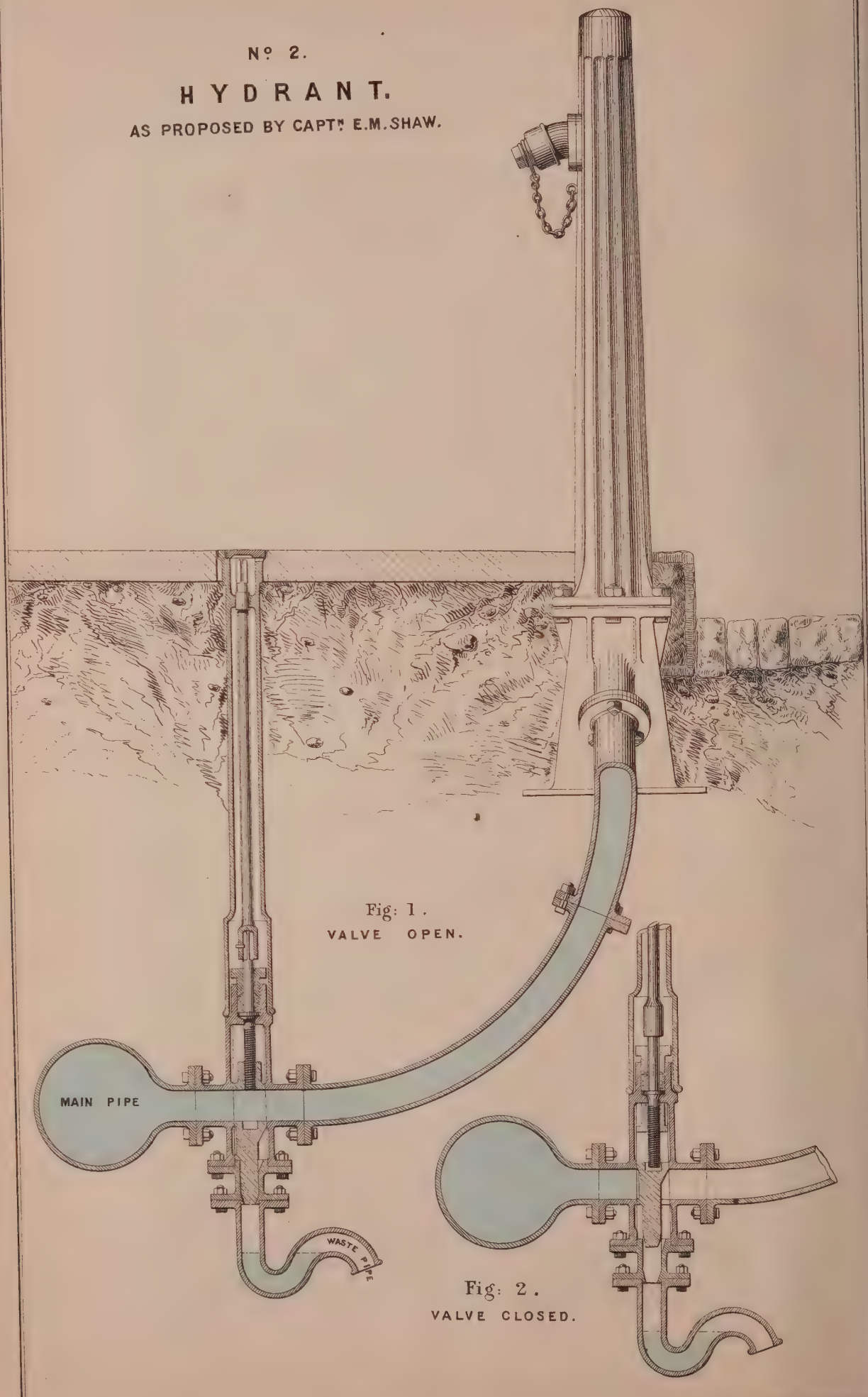
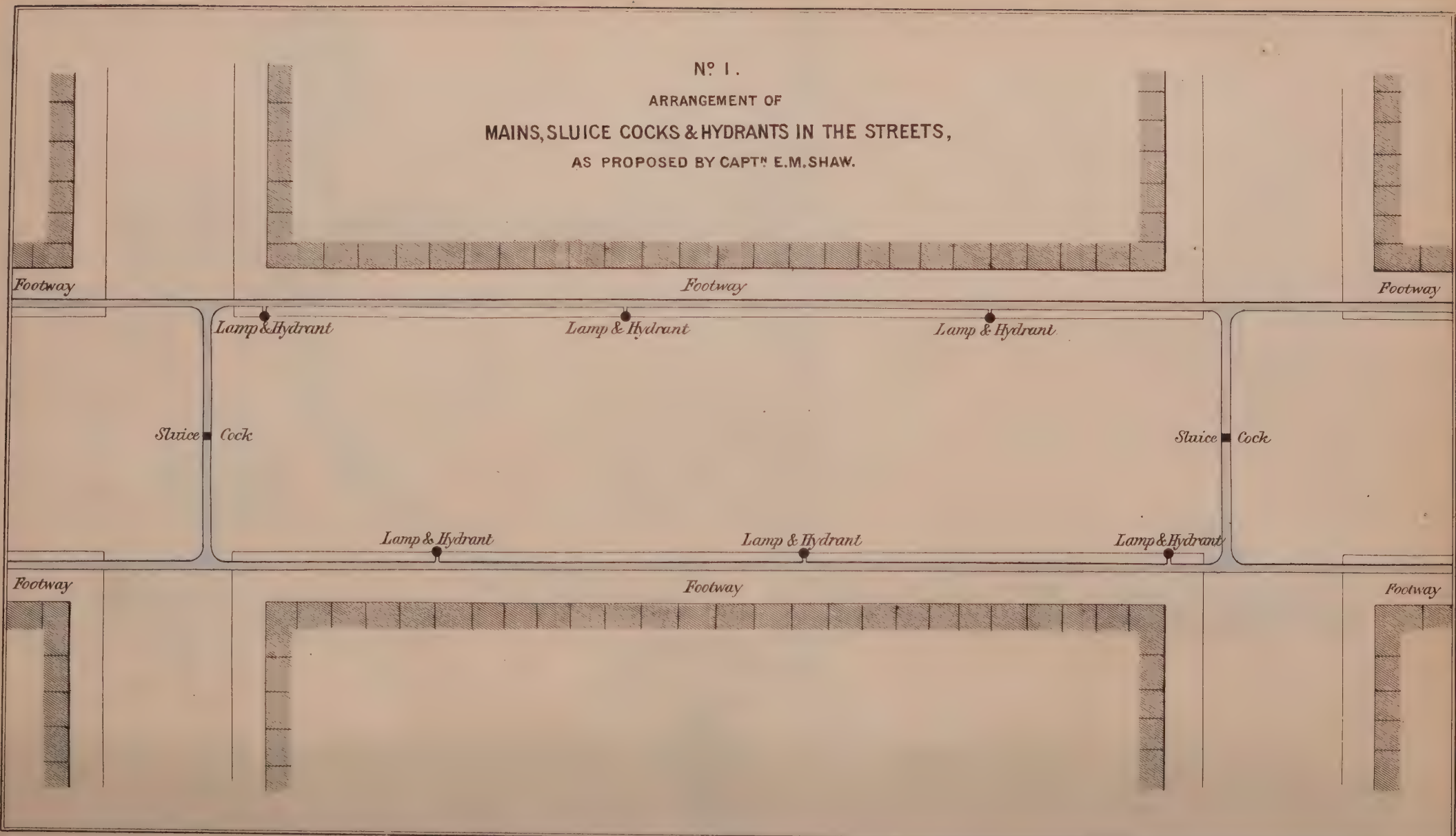


Fig: 1.
VALVE OPEN.

Fig: 2.
VALVE CLOSED.

To face p. 66.


Nº 1.
ARRANGEMENT OF
MAINS, SLUICE COCKS & HYDRANTS IN THE STREETS,
AS PROPOSED BY CAPTN E.M. SHAW.
Footway
Footway
Footway
Lamp & Hydrant
Lamp & Hydrant
Lamp & Hydrant
Sluice
Cock
Sluice
Cock
Lamp & Hydrant
Lamp & Hydrant
Lamp & Hydrant
Footway
Footway
Footway

the last-mentioned point only has been referred to me, and is one to which my special attention has been directed for many years, I find it impossible to make a definite report on it without first receiving precise information concerning all the others.

For these and other reasons I hold a very strong opinion that no advantage at all commensurate with the expense would be likely to arise from any attempt that could be made to improve the present fire-plugs, which are, perhaps, the worst to be found in any city in the world; and I would urge on the Board the advisability of using their influence to obtain, as soon as possible, a complete system of constant supply throughout the metropolis, coupled with some such ready means of applying the hydraulic pressure to the suppression of fires as that above suggested.

Any modification of the existing intermittent system must be attended with loss and inconvenience, and prove unsatisfactory in the end. At the same time, all information which may be obtained from the Water Companies as to the number and position of their mains, services, and plugs, especially all that may be shown on plan, will prove useful; and Mr. Vulliamy's suggestions on this point may lead to valuable results.

I append two sketches which may serve to explain the views here set forward. No. 1 shows the proposed arrangement of the mains, sluice-cocks, and hydrants in the streets; and No. 2 is a drawing of the hydrant which I should recommend for general use.

(signed) *Eyre M. Shaw*, Chief Officer,
Metropolitan Fire Brigade.

METROPOLITAN BOARD OF WORKS.

FIRE BRIGADE.

Chief Station, Watling-street,
London, 25 June 1866.

"Captain Shaw to report to the Committee as to the inconvenience at present "sustained in finding water at fires, and what course he recommends for obviating "the inconvenience."

In compliance with the above Resolution, I have to report that, on 13 occasions during the present year, inconvenience has been sustained in finding water at fires, owing, in every case, to the non-attendance of the regular turncocks, who alone understand the proper mode of working the existing water services with good effect.

The course which I should recommend for obviating this inconvenience would be to discontinue the existing intermittent service, which is complicated and imperfect, and requires special men to work it, and to substitute for it a constant service, with a sufficient number of hydrants which could be opened by anyone, and would immediately deliver water without the delay of proceeding to a distance to open one sluice-cock and shut a number of others, in order that the whole of the available supply might flow to the required locality.

I am convinced that the establishment of a constant high-pressure service will be found the only mode of overcoming the difficulties, and that any attempt to improve the present arrangements will only tend to prolong the existence of a system which, so far as fires are concerned, is most imperfect and unsatisfactory.

(signed) *Eyre M. Shaw*,
Chief Officer, M.F.B.

[The above Report was ordered by the Committee to be sent to each of the Water Companies, and their replies follow.]

EXTRACTS from Replies by Water Companies to the preceding Report by Captain *Shaw*, dated 25th June 1866.

1.—Southwark and Vauxhall Water Company.

I am instructed to state, that the Court of Directors of this Company will have great pleasure in co-operating with the Metropolitan Board of Works with a view of remedying the evils complained of, but they regret that they do not think it possible to carry out the plan suggested by the Chief Officer of the Fire Brigade.

The Report states—"That on 13 occasions during the present year inconvenience has "been sustained in finding water at fires, owing, *in every case*, to the non-attendance of "the regular turncocks, who alone understand the proper mode of working the existing "water services with good effect."

In the opinion of the Court of Directors, the only practical remedy for this is that which they have so frequently suggested, viz., that a messenger should be kept at each fire station, whose special duty it should be to call the turncock on the first alarm of fire, it being

Appendix, No. 13.

obviously important that the supply of water should be ready before the arrival of the engines. At present, this duty is *entirely ignored* by the Fire Brigade, and the calling of the turncocks is frequently a matter of accident, the only inducement for anyone to call them being that a reward is paid by the Company to the person giving the earliest information of the fire.

With respect to the introduction of the constant high-pressure service, in the opinion of the Directors it is not practicable unless special mains be laid throughout London for the purpose. This would involve an outlay so enormous, as to more than counterbalance the advantages to be gained by its adoption.

The present system of the supply of water for fires being dependent upon the same mains as furnish the supplies for domestic purposes, the great object to be attained in case of fire is to direct the pressure in the main to any particular point, and this is accomplished by simply opening the stopcock connecting the mains in the leading thoroughfares with the pipes in the side streets. Supposing the water were not confined to the leading mains, but allowed to flow through the whole system of pipeage at the same time, the pressure would thereby be so weakened and reduced that, before a sufficient quantity of water would be available, it would be necessary to shut off a very large number of stopcocks, and this would be especially the case in this Company's district, where the levels vary considerably.

It must also be remembered that the introduction of the high-pressure system into London would necessitate the entire reconstruction of the whole of the present house services, including lead pipes, brass fittings, &c., which are only adapted to the present mode of supply, and this would involve an enormous outlay on the part of the householders and owners of property.

With the view of meeting the wishes of the Fire Brigade Committee, as far as practicable, the Company are quite willing to accede to the recommendation in Captain Shaw's Report, "That a sufficient number of hydrants should be attached to the Company's leading mains," and they will afford every facility for the purpose, it being, of course, understood that the hydrants are provided, fixed, and maintained at the expense of the Metropolitan Board of Works, and to the Company's satisfaction, and that they will not be allowed to be used for any other purpose than the extinction of fires. Should the Metropolitan Board of Works wish to lay any additional fire mains in their district, the Company will allow them also to be connected with their mains.

I am instructed further to add, that this Company's officers will at all times afford every assistance and information to the officers of the Fire Brigade on the subject of the water supply in their district.

(signed) *James Rosseter,*
Secretary.

2.—Grand Junction Waterworks Company.

The reply from this Company is verbatim, the same as that from the Southwark Company.

3.—Chelsea Waterworks Company.

The Court of Directors of this Company are at all times willing and anxious to concur in promoting any suggestions from your Board for perfecting the water supply to their district in the metropolis, and they have accordingly treated, with care, the suggestions of Captain Shaw for the alteration of the present mode of supplying water for extinguishing fires, and the observations made thereon by your Committee.

In the first place, the Directors have to notice, that at 13 only of the fires which have occurred during the present year, throughout the metropolis, the want of prompt attendance on the part of the turncocks is complained of, whilst the actual number of fires is understood to have exceeded 1,400.

With reference to the assumption that regular turncocks alone understand the proper mode of working the existing fire services, I am to observe that keys of the stopcocks commanding the mains and pipes, are supplied to all the engine stations in the Company's district, and that the use of them is taught to any of the Fire Brigade men on application.

The Directors also desire me to call the attention of your Committee to the fact that the turncocks are distributed throughout the district at reasonable distances from each other, and their addresses given, on printed notices, to each brigade and police station. The supply of water should be ready before the arrival of the engines, but the duty of calling the turncocks is not unfrequently delayed until the engine has been sent for. In fact the summons to the turncock is a matter of accident, the only inducement to any person to call him being the reward paid by the Water Company,

The reward formerly paid by the parishes is now discontinued, and I am particularly to bring this fact, and the necessity of giving the turncock notice, to your attention and to that of Captain Shaw.

With reference to Captain Shaw's observation, that, in order to obtain the full pressure of water at one locality, it is often necessary to open one sluice-cock and close others, I am directed to state, that in some exceptional cases of fire occurring in the side streets, remote from the principal mains (which are always charged), it is found necessary to concentrate and direct the pressure of water to a particular point, and that the present system of supply affords the means of effecting this object more readily and thoroughly, than it could be effected

effected under the constant-supply system, by which the water would be spread over the entire area of the district.

The Directors further beg leave to direct the attention of your Committee to the very great expenditure which an alteration of the present system would entail upon the public, on the Water Companies, and on the Metropolitan Board of Works, and they submit that this part of the question is one that requires to be alternatively considered.

The inhabitants, owners, or occupiers of houses would have to expend considerable sums in altering the leaden pipes and brass work, which are contrived, and only sufficient, for the present mode of supply, and are not capable of bearing constant pressure. These fittings would have to be changed for work of a much stronger description, and it has been estimated that the cost of this operation alone would, on the average, exceed 6 *l.* per house.

The Water Companies would be at considerable expense in altering and extending their pipeage, involving the opening of many streets, and the Board of Works would have to expend a large sum to establish the proposed hydrants, which would cost about 10 *l.* each; and it is calculated that, in the Chelsea Company's district alone, more that a quarter of a million of money would have to be spent by the inhabitants, the Company, and the Metropolitan Board, to introduce the changes proposed by Captain Shaw, the Chelsea Company's district comprising only about one-tenth of the Metropolitan Water Supply.

The Directors are of opinion that the Metropolitan Board of Works will consider these expenses a very formidable obstacle to Captain Shaw's suggestions, and will deem these observations worthy of mature attention.

The Directors particularly desire me to add that any recommendations from your Board for giving the most abundant supply of water for all purposes shall be fully and anxiously attended to, and effected to the best of the Company's power.

(signed) *Albert Gill,*
Secretary.

4.—New River Company.

The Company's works are ready to afford "*constant*" supply, but such supply will not be generally possible in their district until consumers have prepared themselves, by a costly alteration of their house pipes, &c., to receive it without unreasonable waste.

Although an "*intermittent*" mode of service is thus for the time unavoidable, there are, in connection with it, better means of concentrating the pressure of water for use at fires, than could exist with all pipes charged, and open to the draught which the service, or waste of consumers, might cause.

All the Company's leading pipes, or mains, are already "*constantly*" charged; and by the opening of a single cock there may be immediately put under pressure, any one of those short, subsidiary lines of pipe which are branched from these leading mains, and which lie in every street in the Company's district.

Under existing arrangements, it is very seldom that water from the Company's pipes is not flowing before the engines of the Fire Brigade are ready at a fire to use it. If fire engines have had, at any time, to wait for water, it has been through delay in the call of a turncock to the spot. To induce the early call of their turncocks, and to insure the quickest attention thereto, the Company reward all persons who first give notice of fires, they allow their own men gratuities for promptness, they set up marks to indicate the places at which their turncocks and deputy turncocks reside, and they forward, every quarter, to all *Police, Fire, Parish*, and other public stations, printed lists of the names and addresses of their street foremen, turncocks, and deputy turncocks, with advertisements of the rewards which they pay (as aforesaid) for "first calls." To meet the rare occurrence of a turncock's late call, the Company have repeatedly intimated their readiness to allow both firemen and police the use of the keys, by which these officers might, at any time in the absence of turncocks, obtain themselves the water wanted at a fire.

Were the Metropolitan Board to adopt some more uniform and perfect system of marking the places of plugs, and of their commanding cocks, than parish authorities have practised hitherto, there would be a removal of much of the difficulty said to be felt now in the use of water keys by firemen, or others, when any neglect in the call of a turncock has occurred.

Properly constructed hydrants, on "mains," would add special facilities for the acquirement of a good water supply for use at fires; and these additional facilities might, without any change in the Company's present mode of supply, be secured at once in the many miles of street in the Company's district, in which there are already, constantly charged pipes, on any arrangement by the Metropolitan Board of Works to defray (as Acts of Parliament have described), the cost of the requisite apparatus, and of the maintenance thereof, and to prevent the use of the provided hydrants (except with the Company's sanction) for any other purpose than that of extinguishing fire.

Should it be the desire of the Metropolitan Board of Works to have also a constant supply for fires in any other streets in which there cannot, as yet (from the condition of the water apparatus of consumers), be a constant supply for houses, the Company would willingly provide for such cases by laying down special branched mains, on having guarantee for the annual payment to them of a 5 per cent. interest on their outlay on these extra lines of pipe.

(signed) *Frederick Inglis,*
Clerk.

Appendix, No. 13.

5.—Lambeth Waterworks Company.

The Directors are most desirous and anxious to aid the views of the Metropolitan Board of Works on all points connected with the supply of water to the district supplied by the Company.

With regard to the plan suggested by Captain Shaw, I am to observe there are impediments to the application of it which are of a serious character, more especially the very large expense of the undertaking to apply the constant service high-pressure system for supplies in case of fire.

The adoption of that system would involve the necessity of changing all the plumbers' work in the houses, and throw on the inhabitants an enormous expense, the present leaden pipes and brass fittings being totally insufficient to bear the constant high-pressure service system of supply; and the hydrants suggested by the Chief Officer of the Fire Brigade, which would exceed 5,000 in number, would cost a considerable sum, to be defrayed by the Metropolitan Board of Works, and, added to these charges, the Company would have to bear a large outlay in altering and extending their mains and pipes throughout the district.

The Directors of the Lambeth Company beg to call attention to the fact that the cases of delay in the supply of water have been very few in the district, and the Company's turncocks have seldom been more than five minutes behind time at a fire, and I am to represent that the instances of delay which occur are almost invariably attributable to the practice of not calling the turncocks until after the engines are sent for.

The company have always laboured under this difficulty, notwithstanding the rewards they pay to persons for giving notice to the turncocks on occasions of fire, and the extensive circulation of a notice paper containing the names and residences of the turncocks, &c., &c., a copy of which is enclosed herewith.

The Directors desire me to express their anxiety to improve the supply of water in the Lambeth Company's district to the utmost possible extent, and to state that within the ast 15 years they have materially added to their reservoirs and works, and more than trebled the length of large main pipes, constantly charged with water, which has very much facilitated the supplies of water, in cases of fire.

In conclusion, I am desired to inform you the Directors will be happy to consider and apply any practical measure for rendering the supplies of water, in cases of fire, more prompt and efficient; and they further desire me to state that they consider the Company's turncocks, on the whole, have been very successful in performing their duties at fires, and, under the suggested system, it is questionable if delays in obtaining supplies of water at fires will not be as frequently experienced as they are at present, more especially when the difficulties of keeping pipes and hydrants in efficient repair in the crowded throughfares of the metropolis are taken into account.

(signed) *W. S. Phipps*,
Secretary.

6.—East London Waterworks Company.

The Company are prepared to comply with the provisions of the Act 15 & 16 Vict. c. 84, and of the Act of 28 & 29 Vict. c. 90.

Upon receiving a requisition from the Metropolitan Board of Works, the Directors will give the subject immediate consideration.

(signed) *E. Bates*,
Secretary.

7.—West Middlesex Waterworks.

Mr. *W. B. Hack*, the Engineer, reports to the Directors:

Firstly—That Captain Shaw reports that, on 13 occasions during the present year, inconvenience has been sustained in finding water at fires, owing in every case to the non-attendance of the regular turncocks, and to remedy this inconvenience, he proposes to discontinue the present or existing intermittent service, and substitute for it the constant service, with a sufficient number of hydrants which could be opened by anyone, and would immediately deliver water, without the delay of proceeding to a distance to open one sluice-cock, and shut a number of others.

Secondly—Captain Shaw states that he is convinced the establishment of a constant high-pressure service will be found the only mode of overcoming the difficulties.

Now, firstly, with reference to the 13 cases mentioned, I consider that number for the whole metropolis to be very small out of the numerous attendances of the turncocks, for, on referring to Captain Shaw's Report of the number of fires in the metropolis from January to June 1864, I find he states 703 occurred, and assuming that about the same number may have occurred from January to June 1866, the date of his Report, the inconvenience amounts to 1·8 per cent. But Captain Shaw does not give the number of times the water was ready for the use of the engines before any engine arrived; I, therefore, have done so for the districts supplied by the West Middlesex Company, and I find, from the official returns made by the turncocks, that they amount to 14 times. I beg here to suggest that some

some efficient mode ought to be adopted by the Fire Brigade, or the parish vestries, of summoning the turncock in case of fire, as at present his knowledge of a fire is entirely dependent upon being informed of it by some accidental person to whom the Water Companies alone give a reward for calling the turncock.

For many years I have given the matter of constant service much consideration, and I am satisfied, and I believe it is generally admitted by all the engineers of the London Companies, that to attempt to provide a constant supply for fires from the service pipes that now supply the houses would be an utter failure.

For, to do this, it would be necessary that the whole of the present arrangements under the intermittent system should be remodelled: and, first, I believe that 75 per cent. of the present lead pipes would not stand the *constant* pressure. The builders, for economy, use very light lead pipes, and even where the lead pipes have been originally of sufficient strength, they have now become corroded and reduced so much in thickness that I am sure they would give way; the same may be said of the brass fittings; therefore, before the constant supply could be introduced, the expense would be enormous, which expense it must be remembered would fall on the owners or occupiers of the houses. It would also be necessary to remove all the waste pipes from the cisterns, and invent some new and efficient valve for all the water-closets, with flushing apparatus that would allow of only the required quantity of water to be used. It would, however, be perfectly possible to establish a system of hydrants by supplementary mains attached to the trunk mains. The supplementary mains for fire purposes only should be five inches in diameter, and if these were laid down in all the principal streets, and the hydrants were 100 yards apart, the cost in your district would probably be as follows:—

		£.
1,056	Hydrants fixed to the mains - - - - -	10,560
125	Miles of 5-inch service - - - - -	60,500
2,200	Hydrants fixed at the time the pipes are being laid	16,500
550	Fire services, cocks, and connections to be attached to be attached to the leading mains - - -	5,500
550	5-inch screw cocks - - - - - -	2,750
550	Pitching round the screw-cock boxes - - -	330
		96,140
	Add 10 per cent. for contingencies - - - - -	9,614
	£.	105,754

In continuation of this Report I may be permitted to remark upon the alteration that has taken place in Captain Shaw's opinion since he gave his evidence before the Select Committee on the Fires in London, in July 1865. In answer to Question 578, he stated he had only experienced any want of water twice in about 600 fires. Then, in reply to Question 588, would there not be danger of exhausting the present ordinary supply of water in London if he had three or four very powerful steam engines; he replied, "No; except in one or two districts"; and in answer to Question 590, "In what parts of London is it, according to your experience, most deficient?" he stated, "Generally speaking, it is efficient all over London for any purposes for which we can ever require it?" Question 630, and his reply, I beg to quote in full:—"You stated that the supply of water had only been short "at two out of 600 fires. Has it occurred to you that it would be desirable to provide "an altogether distinct supply of water for the metropolis, distinct from the ordinary "supplies which go to houses; a supply which would be kept only for occasions of fire, and "which would not be drawn upon at other times?" He replied, "*I do not think it is requisite.*"

If hydrants are to be provided as suggested, it is of course not for me to determine who is to pay for this outlay, but I presume it would be undertaken by the Metropolitan Board; for I cannot imagine it would be considered reasonable to subject the Water Companies to such an enormous expenditure because of the slight inconvenience of the present system, which, I also venture to think, by more attention in calling the turncocks, might be prevented.

8.—Kent Waterworks Company.

The Directors request me to acknowledge the receipt of your letter of the 9th July last, enclosing Captain Shaw's recommendation of constant service of water as a better means of protection against fire. The subject has been referred to their engineer, whose report thereon is as follows:—

Constant service for extinguishing fires necessarily implies the adoption of the general constant supply contemplated in the "Metropolis Water Supply Act." For this the Company, on their part, are perfectly prepared; and on the necessary requisition from the inhabitants, and their compliance with the provisions of the Act for the prevention of waste of water, such supply could at once be given. Though for the adoption of constant service the Company have to await the co-operation of the public, yet great assistance could be given in extinguishing fires if the mains of this Company that are always under pressure had a systematic use made of them.

As I am desirous of not being misunderstood, the Directors will pardon me, if I remind them of the distinction between mains and services, as applicable to this subject.

Appendix, No. 13.

The mains of this company are those pipes that extend from the works through all the principal streets and roads, and which, day and night, are kept under pressure. The services are lines of pipes smaller in diameter than the mains, and are laid parallel thereto, and extend also down all the side streets. These services are all connected to the mains, and the house pipes are connected to the services. Sluice-cocks are placed at intervals to shut off the supply from the mains.

On these service-pipes are inserted (one or more in every street) wooden plugs that are drawn (in case of fire) for the cleansing the pipes, and for the supply of the public by hand-pipes in times of hard frost.

If hydrants were fixed to the mains, water at all times could be obtained, and Captain Shaw's recommendations at once, to a great extent, be carried out.

The Company have now 50 miles of mains under constant high pressure, and though the advantages of hydrants thereon have been repeatedly urged on the several parish boards, Woolwich and Greenwich are the only towns that have yet placed hydrants on the mains—Woolwich to some extent, and Greenwich partially. These hydrants have been repeatedly used with great effect in cases of fire.

In connection with the Company's works, fire-mains have been laid down to the Victualling and Dockyards at Deptford, to Greenwich Hospital, to the Dockyard at Woolwich, and, with the exception of the Arsenal, to the whole of the military establishments. At Woolwich the pressure on these mains is uniformly sufficient to throw water over the whole of the buildings under protection without the aid of fire-engines, and without a minute's loss of time. From the same sources and with the same results the Company's mains, if provided with hydrants, could be made available for public use.

As regards hydrants on the services, they would be useful, but, from the smaller diameter of the pipes, and their connection with the house supply, they would not be so effective as the hydrants on the mains; and until constant supply becomes practicable, the assistance of a turncock would be necessary.

With reference to the communication from Mr. Layton, vestry clerk of Islington, on the subject of Sunday supply, I have to report that it is the rule at these works to fill daily, six days per week, any number of cisterns, &c., without reference to capacity or height, that may be provided for the use of each house. This rule is so well understood and acted upon, that no complaint is made after explanation that the Company will at all times without limit, fill any additional cisterns that may be required to contain a second day's supply; at the same, there are, without doubt, many small houses either without cisterns, or with receptacles unfit for use. To such houses so neglected by the owners, a Sunday service to the inhabitants would be very serviceable, and I presume that it must be to this class that Mr. Layton's letter has reference. If intended as a general measure, it would be far preferable that the provisions of the "Metropolitan Water Supply Act" should be adopted by the public, and a constant supply at once be instituted. The initiation of this is entirely on the heads of the water consumers.

The Directors wish me to add that one great cause of delay experienced in their district is the want of system in summoning the aid of the Company's servants, and are desirous that it should be impressed upon the officers of the Metropolitan Fire Brigade, that it is of equal importance that plugs, hydrants, and other appliances be opened, as that there should be a prompt attendance of a fire-engine.

At present the seeking of a turncock or other qualified person to open the plugs and hydrants appears to be left to chance or altogether neglected. An instance has occurred at Woolwich where premises were destroyed within a few feet of a hydrant on one of the Company's mains, when water, in abundance, could have instantaneously been obtained by any person with local knowledge.

The Directors admit the extreme importance of this subject, and will be glad to co-operate with your Board to give the fullest effect to the Company's ample means of water supply, and at all times to furnish the fullest information in their power on any matters connected with this question.

Griffith Thomas.

Appendix, No. 14.

PAPER handed in by Mr. *Richardson*. Appendix, No. 14.

METROPOLITAN BOARD OF WORKS.

FIRE HYDRANTS.

REPORT made to the Works and General Purposes Committee by the Chairman of the Board and the Deputy Chairman of the Committee, on the subject of Hydrants for Extinguishing Fires.

Spring Gardens, 12 October 1874.

In compliance with the request contained in the resolution of the Committee of the 28th ultimo, we have considered this subject, and have now to report the result of our deliberations. It will be well to preface our observations by a few remarks on what the powers and obligations conferred and imposed upon the Board really are. By the 32nd section of the Fire Brigade Act of 1865, the water companies are required to provide, at the Board's expense, in any mains or pipes in the metropolis, such plugs for the supply of water in case of fire as the Board may require. In the Metropolis Water Act of 1871 (Sect. 34), the operation of this enactment is extended by the provision that if the Board do not, within two months after receiving notice from a company that a constant supply has been given in any district, specify what plugs it requires the company to provide, the company may supply such plugs as it may consider necessary or proper, at the expense of the Board. And this also is to be noted: that, whereas, in the Acts prior to the Water Act of 1871, mention is made of plugs only as the means of obtaining water from the mains for extinguishing fires, the Act of 1871 says that the term plug shall include hydrant, and all other apparatus necessary or proper in connection with the company's pipes for supply of water in case of fire. By this we understand that the Board is empowered, if it should be of opinion that the more complicated instrument termed a hydrant is of greater value for the extinction of fire than the common wooden plug, to cause hydrants to be provided. But this is a power which is discretionary, the provision of either plugs or hydrants equally satisfying the requirements of the statute.

The first question for consideration, then, obviously is, what are the advantages of the hydrant as compared with the common wooden plug? The answer to this question we have sought from the practical experience of Captain Shaw, the chief officer of the Fire Brigade, and we will endeavour to state as clearly as possible what, according to him, those advantages are. And first, it will be well to clear up a doubt which, we have reason to believe, largely exists, and that is, whether Captain Shaw, the responsible officer of the Fire Brigade, is of opinion that, if hydrants, with stand posts, were provided throughout the metropolis, after the establishment of a constant supply of water, those hydrants would be an efficient substitute for fire engines. In reply to this question, which we distinctly put to Captain Shaw, he expressed his belief, a belief shared he said by all skilled firemen, and warranted by experience, that hydrants, with stand pipes, placed at suitable distances throughout the metropolis on mains constantly charged with water at high pressure, would render unnecessary the use of fire engines, save in the case of fires of exceptional magnitude, or of fracture or damage of the pipes. We are given to understand that, as regards the mere delivery of water at the street level, this is effected as soon by means of wooden plugs as by hydrants; but that, to direct a jet of water upon a fire, at least four minutes more is required with engines and plugs than would be required with hydrants and fixed stand posts. With engines the following process has to be gone through: a dam is placed over the plug hole through which the water issues, and into this the suction pipes are led, through which the water is drawn by the engines, and then forced through delivery hose and jets on to the fire. With hydrants and stand posts, all that would have to be done would be to fix a hose and jet on to the stand post, and water would at once be

Appendix, No. 14.

delivered on to the fire. Apart from the question of time, we are told by Captain Shaw that hydrants would be more useful than engines, because their action is more regular and steady, and always to be relied upon, and there is the further advantage that with hydrants there would be no waste of water.

The question then occurs whether, with a system of hydrants in general operation, a sufficient number of jets of water could be secured to extinguish fires of ordinary magnitude without the use of engines. Captain Shaw states that the water mains vary in size from three inches upwards, and he says that, assuming a 6-inch main, under a pressure sufficient to throw a 1-inch jet 100 feet high from the ground level, with hydrants of 2¼ inches in diameter placed at a distance from each other of 200 feet, 12 stand posts might be brought into requisition, each yielding a useful jet of water converging on one fire which would reach a height sufficient for all ordinary purposes. This would be the case unless the length of hose extending from the 12 stand posts to the fire should be so great as to cause considerable obstruction to the water.

As regards the question of expense, the cost of establishing a sufficient number of hydrants throughout the metropolis would doubtless be considerable; but, assuming the correctness of the information given to us, it should be borne in mind that there would be a substantial diminution of expenditure in other directions. For instance, the number of engines necessary to be kept up could be reduced, and the wear and tear would be comparatively small. The cost of coal would be less, and the expenditure upon horses, one of the largest items of the Fire Brigade expenditure, would probably be capable of reduction by one-third, as, instead of having to take a heavy engine to every fire necessitating two or three horses, all that would be wanted in most cases would be a light van to carry the men with the hose and other appliances. As the amount paid by the Board for horses is now nearly 9,000 *l.* a year, the extent of this reduction will be apparent.

We will endeavour to give a general idea of what the position of things would be in the matter of expenditure. The Board's engineer states, in a report presented to the Committee on the 3rd August last, that there are about 1,200 miles of roads in the metropolis in which houses have been built. Taking this length, and assuming that hydrants of the kind referred to by the engineer are placed at a distance of 200 feet from each other, the number of hydrants required would be about 32,000. The cost of these hydrants is given at 4 *l.* 14 *s.* each, but this is without stand posts. With stand posts and other necessary things, the expense of supervision, &c., the cost would probably be about 9 *l.* each, or 288,000 *l.* Taking the total cost at 300,000 *l.*, this at 4 per cent. would be equivalent to 12,000 *l.* a year. Against this would have to be set off the following:—

	£.
Reduction in wear and tear of engines, and in purchase of new engines, about	2,000
Reduction in quantity of coal and oil consumed, about	500
Reduction in amount paid for horses, about	3,000
£.	5,500

The matter would then stand thus:—

	£.
Annual equivalent of estimated expenditure upon hydrants	12,000
Estimated annual saving in other branches of expenditure consequent thereon	5,500
Leaving, as the estimated increase in annual expenditure £.	6,500

We need hardly say that we are not in a position to offer any recommendation to the Committee on this subject. The views above expressed are entirely those of Captain Shaw; we could not, of course, represent them as our own, without having satisfied ourselves of their correctness, and this would involve the making of experiments. One thing is clear, that the question of providing hydrants as a substitute for engines is of great importance, and one which must be thoroughly considered and discussed in all its bearings before any conclusion is arrived at. There is, fortunately, no necessity for haste, as the condition precedent to any action in the matter—a constant supply of water throughout the metropolis—does not yet exist. It would, however, in our opinion be well for the Board to prepare by timely deliberation for some course of action, and the information contained in this report may be useful to the Committee when considering the subject.

(signed) *J. M. Hogg.*
G. B. Richardson.

Appendix, No. 15.

PAPER handed in by Mr. *Thompson*, 26 June 1876.

RETURN relating to Contributions from INSURANCE OFFICES upon the Rateable Value of the Metropolis.

Rateable Value of Houses and Buildings in the Metropolis, say, £. 23,100,000.	Value of Leasehold Interests in the Metropolis, 12 times Rateable Value, or, say, £. 276,000,000.	Half Value of Leasehold Interests: £. 138,000,000.
Insurances effected in Insurance Offices on Property in the Metropolis: £. 540,000,000.	Difference of £. 540,000,000 and £. 276,000,000 on Buildings, £. 264,000,000 on Goods.	Difference of £. 540,000,000 and £. 138,000,000 on Buildings, £. 402,000,000 on Goods.
1876. Amount of Halfpenny Rate: £. 48,148 11 *s.* 4 *d.*	1876. Contributed by Insurance Offices: £. 18,905 2 *s.* 8 *d.*	Amount of Contributions of Offices, at £. 35 per Million on £. 540,000,000: £. 18,900.
Amount of Contributions, if at £. 40 per Million: £. 21,600.	Amount of Contributions, if at £. 45 per Million: £. 24,300.	Amount of Contributions, if at £. 50 per Million: £. 27,000.

Appendix, No. 16.

Appendix, No. 16.

PAPERS handed in by Mr. *A. Gunn*, 26 June 1876.

METROPOLITAN FIRE BRIGADE—WORKING ACCOUNT.

RECEIPTS and PAYMENTS from 1866 to 1875.

	Receipts.			Payments.		
	£.	s.	d.	£.	s.	d.
1 January to 25 March 1866	13,073	1	–	3,468	18	9
Year to 25 March 1867	57,632	14	7	47,128	4	5
„ „ 1868	56,349	3	–	62,202	3	–
„ „ 1869	60,640	7	–	66,734	6	3
„ „ 1870	48,431	6	6	62,400	16	2
„ „ 1871	67,092	10	–	64,168	3	5
¾ Year to 31 December 1871	59,887	11	5	46,810	–	10
1 „ „ 1872	70,647	15	7	67,519	1	5
„ „ 1873	70,980	–	7	73,913	9	7
„ „ 1874	73,095	8	11	75,912	6	1
„ „ 1875	74,743	14	10	75,059	17	4
	652,573	13	5	645,317	7	3
Balance in hand				7,256	6	2
			£.	652,573	13	5

ESTIMATE of AMOUNTS required for WORKING EXPENSES of the FIRE BRIGADE for the Year 1876.

(Exclusive of Interest on Money borrowed, which is provided for in the Consolidated Loans Fund.)

ESTIMATE 1876.

	£.	s.	d.	£.	s.	d.
AMOUNTS PAYABLE:						
Staff—						
Salaries and Wages	37,800	–	–			
Men's Clothing	3,000	–	–			
Pensions	340	–	–			
Medical Officers	480	–	–			
				41,620	–	–
Stations—						
Maintenance	3,300	–	–			
Rents (less amount deducted from Men's Wages)	2,175	–	–			
Rates, Taxes, Insurance and Gas	3,235	–	–			
				8,710	–	–
Engines, Fuel, &c.—						
Maintenance of Engines and Escapes	7,000	–	–			
Horse-hire	8,800	–	–			
Coals, Coke, Oil, &c.	3,300	–	–			
Telegraph Hire	1,450	–	–			
				20,550	–	–
Miscellaneous—						
Expenses at Fires	1,800	–	–			
Establishment Charges	1,700	–	–			
Incidentals (including Stationery, Printing, Travelling, and Petty Disbursements)	1,700	–	–			
Summonses and Expenses of collecting Chimney Fire Penalties	230	–	–			
				5,430	–	–
Extra Expenditure under any of the foregoing heads				400	11	4
Expenditure in prior Years not yet provided for				3,093	–	–
				79,803	11	4
AMOUNTS RECEIVABLE:						
Contributions—						
H.M. Government £. 10,000	–	–				
Insurance Offices 18,905	–	–				
	28,905	–	–			
Ex-Metropolitan Fires	150	–	–			
Watching Premises	1,500	–	–			
Chimney Fire Penalties	1,000	–	–			
Miscellaneous	100	–	–			
				31,655	–	–
Amount required for 1876			£.	48,148	11	4

Appendix, No. 16.

METROPOLITAN FIRE BRIGADE.—CAPITAL ACCOUNT.

Loans Raised and Amounts Expended, 1866 to 1875.

	Loan Raised.			Expenditure.		
	£.	s.	d.	£.	s.	d.
1 January to 25 March 1866	—			—		
Year to 25 March 1867	-	-	-	19,222	14	9
„ „ 1868	-	-	-	14,407	12	10
„ „ 1869	40,000	–	–	21,242	14	4
„ „ 1870	35,000	–	–	5,292	10	11
„ „ 1871	-	-	-	8,651	11	1
¾ Year to 31 December 1871	25,000	–	–	7,356	6	11
1 „ „ 1872	-	-	-	8,705	6	2
„ „ 1873	15,000	–	–	7,054	–	5
„ „ 1874	-	-	-	13,838	3	2
„ „ 1875	-	-	-	9,627	19	11
	115,000	–	–	115,399	–	6
Balance overdrawn, to be defrayed from the Loan of 15,000*l.* to be raised in 1876	399	–	6			
£.	115,399	–	6			

METROPOLITAN FIRE BRIGADE.

RETURN showing Amount of First Cost of Stations, from 1st January 1866 to 31st December 1875.

	£.	s.	d.		£.	s.	d.
Battersea	2,812	10	4	Notting-hill	1,414	8	4
Baker-street	5	9	4	Old Kent-road	1,465	5	7
Bethnal Green	17	19	4	Oxford-street	5	9	4
Bishopsgate-street	12	16	4	Paddington	1,090	4	10
Brixton	1,726	8	3	Poplar	2,447	15	–
Blackheath	1,409	9	1	Portland-road	2,051	10	3
Bow	667	19	7	Ratcliff	5	9	4
Brompton	645	14	7	Regent-street	21	6	3
Camberwell	2,292	10	7	Rotherhithe	22	–	4
Chandos-street	403	17	–	St. Giles	5	9	4
Clapham	639	–	–	St. John's Wood	2,605	6	3
Clerkenwell	8,280	11	7	St. Luke's	4,744	15	–
Deptford	1,632	12	8	St. Pancras	1,255	15	–
Farringdon-street	631	14	4	Shoreditch	3,596	–	–
Fulham	1,320	9	2	Southwark	5,031	12	2
Hackney	2,712	15	1	Stoke Newington	28	4	4
Hammersmith	25	–	–	Sydenham	2,018	11	6
Hampstead	4,216	11	5	Tooley-street	816	2	6
Highgate	228	9	5	Tooting	1,362	13	6
Holborn	608	10	6	Wandsworth	511	3	10
Holloway	1,600	17	11	Waterloo-road	5,301	9	1
Horseferry-road	5	9	4	Watling-street	2,881	17	7
Isle of Dogs	8	1	–	Wellclose-square	5	9	4
Islington	2,500	11	11	Westminster	5,281	4	4
Kennington	2,558	13	8	Whitechapel	9,935	19	–
Kensington	2,696	11	2	Woolwich	895	–	–
Lewisham	1,270	16	10	Escape standings	41	–	–
Mile End	2,988	16	1		98,761	8	6
Purchase of New Engines, &c.					12,918	9	–
Establishment Charges					3,719	3	–
Total Expenditure £.					115,399	–	6

Appendix, No. 16.

METROPOLITAN BOARD OF WORKS.

RETURN of Fire Brigade Stations in use on the 31st December 1875, showing Rental, &c., Cost of Erection, and Amount expended in Alterations and Repairs.

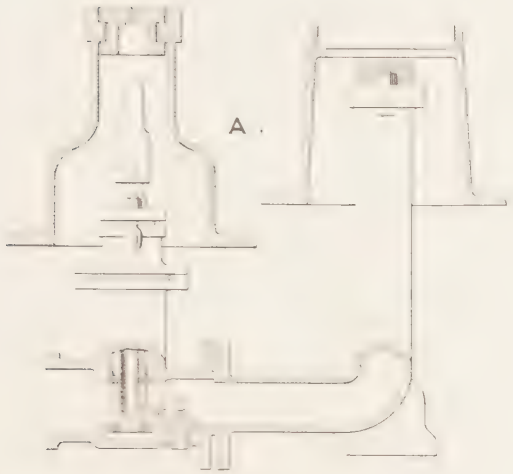
STATION.	Rent.	Purchase Money of Freehold or Lease.	Cost of Erection.	Amount Expended in Repairs and Alterations.
District A.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Westminster - 1868	Freehold -	1,020 – –	4,171 11 5	752 17 6
Brompton - „	50 – –	- -	624 5 8	182 2 8
Fulham - „	18 – –	- -	1,282 – –	215 3 11
Hammersmith - Old	40 – –	- -	- -	463 19 11
Kensington - 1871	Freehold -	925 – –	1,740 2 10	43 17 10
Notting Hill - 1871	26 – –	- -	1,836 10 11	38 16 1
Paddington - 1870	100 – –	- -	1,047 14 10	68 15 7
Baker-street - Old	60 – –	- -	- -	263 12 7
St. John's Wood 1868	Peppercorn	300 – –	1,801 4 5	266 6 11
Hampstead - 1873	Freehold -	1,952 5 6	2,161 12 1	—
Portland-road - 1868	30 – –	*180 – –	1,833 – –	642 4 2
Regent-street - Old	63 – –	- -	- -	429 19 3
Highgate - - - -	9 – –	200 – –	- -	131 – 6
District B.				
Clerkenwell - 1873	Freehold -	† 3,028 – 6	3,968 8 10	—
Islington - 1869	34 – –	950 – –	1,466 2 8	11 11 7
St. Luke's - 1874	90 – –	- -	4,710 17 –	—
Watling-street - Old	174 6 8	- -	- -	2,183 1 7
Chandos-street „	27 10 –	- -	- -	607 14 10
Holborn - „	33 – –	- -	- -	626 7 8
St. Pancras - „	14 – –	1,250 – –	- -	338 9 3
Holloway - 1872	25 – –	- -	1,487 8 7	69 4 4
District C.				
Whitechapel - 1875	Freehold -	3,452 – –	7,215 10 –	—
Hackney - 1868	ditto -	615 – –	2,038 7 1	135 3 7
Bethnal Green Old	35 – –	- -	- -	213 7 7
Mile End - 1872	50 – –	- -	2,950 – 2	21 13 8
Bow - - 1869	15 – –	- -	624 – –	97 9 7
Poplar - - 1868	20 – –	- -	2,429 10 –	536 13 9
Ratcliff - - Old	80 – –	- -	- -	362 10 8
Bishopsgate - Old	150 – –	- -	- -	389 1 9
Shoreditch - 1868	Freehold -	1,550 – –	2,263 – –	139 5 1
Stoke Newington, Old	60 – –	- -	- -	485 13 9
District D.				
Kennington - 1868	25 – –	62 10 –	2,335 7 11	651 3 5
Southwark - 1868	Freehold -	1,309 – –	3,718 – –	95 8 1
Tooley-street - Old	145 – –	- -	- -	1,200 11 6
Rotherhithe - Old	35 – –	- -	- -	200 2 3
Deptford - 1870	7 10 –	- -	1,595 4 6	59 4 –
Old Kent road 1868	36 – –	- -	1,415 19 8	443 15 7
Greenwich - Old	50 – –	- -	- -	206 5 1
Woolwich - 1868	Freehold -	- -	715 – –	58 9 2
Blackheath - 1871	15 – –	- -	1,372 4 1	15 5 8
Lewisham - 1868	20 – –	- -	842 19 6	505 8 11
Camberwell - 1868	Freehold -	410 – –	1,814 3 –	557 10 1
Sydenham - 1868	No rent -	- -	1,969 – –	441 19 11
Brixton - 1868	21 – –	- -	1,628 6 3	162 17 9
Clapham - 1868	1 – –	- -	639 – –	77 8 5
Tooting - 1869	Freehold -	350 – –	1,011 17 –	31 13 10
Wandsworth - 1870	30 – –	- -	491 14 4	72 7 5
Battersea - 1874	Freehold -	280 – –	2,444 15 1	59 – 4
Waterloo-road Old	Freehold -	2,823 12 –	2,477 17 1	269 12 1
Total - - - £.		20,657 8 –	70,122 14 11	14,824 9 1

* Fine. † Purchase, 2,500 *l.*; Interest, 368 *l.* 2 *s.* 2 *d.*; Redemption of Land Tax, 159 *l.* 18 *s.* 4 *d.*

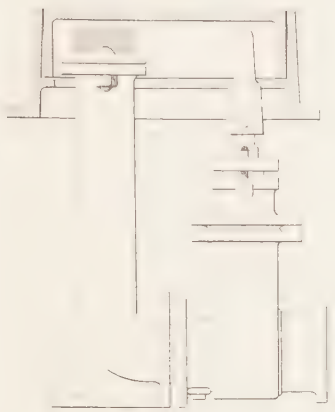
Spring Gardens, S.W.,
15 June 1876.

HYDRANTS.

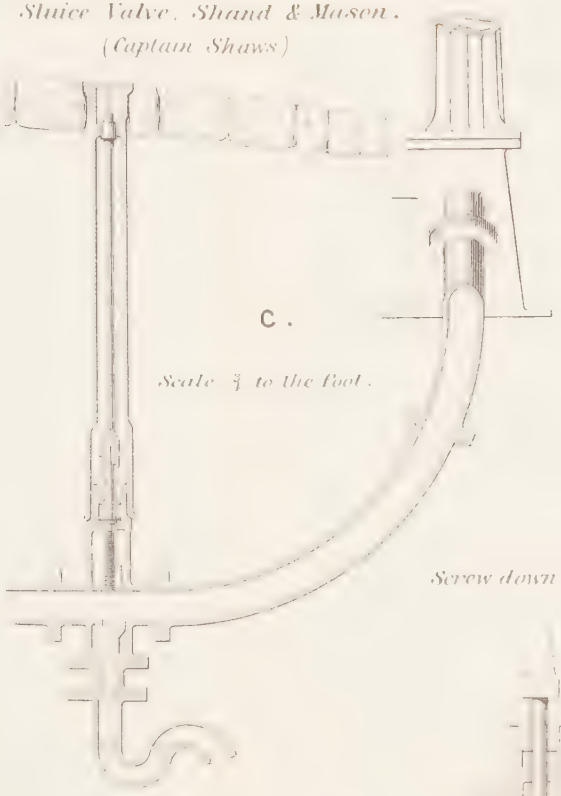
Sluice Valve Nº 1.



Sluice Valve Nº 3.



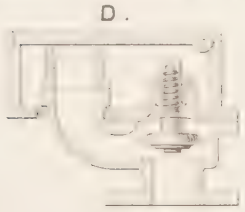
Sluice Valve, Shand & Mason.
(Captain Shaws)



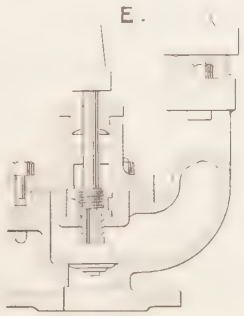
Scale ¾ to the foot.

Portable Stand-pipe for 1.

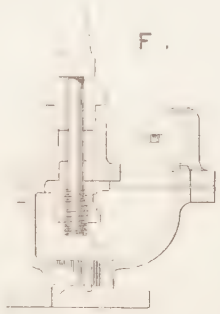
Screw down Valve Nº 1.



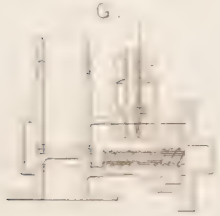
Screw down Valve Nº 4.



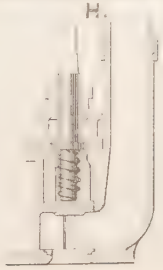
Screw down Valve Nº 3.



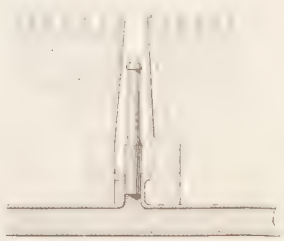
Sluice Valve Nº 2.



Screw down Valve Nº 2.



Ordinary Fire Plug.



Scale 1½" to a foot.

Appendix, No. 17.

DRAWINGS OF HYDRANTS.

Appendix, No. 17.

(See DRAWINGS opposite.)

Appendix, No. 18.

Appendix, No. 18.

PAPERS handed in by Mr. *G. W. Lovell*, 10 July 1876.

— No. 1. —

Mr. *G. W. Lovell* to the Chairman of the Metropolitan Board of Works.

London Salvage Corps, 31, Watling-street,
23 November 1871.

Sir,

The wide-spread discussion on the liability of London to extensive conflagrations, such as that recently experienced at Chicago, has been followed by a careful consideration of the same subject at a General Meeting of the Associated Fire Offices, when resolutions, of which I have the honour to enclose you a copy, were adopted, and the London Salvage Corps was deputed to bring these under the notice of your Board.

The following remarks will more fully explain the considerations on which the resolutions were founded:—

No. 1. The fire at Chicago is said to have owed its extension to an absolute failure of the water supply in the street mains, after the destruction of the waterworks, and it is feared that any district in London might be exposed to a similar calamity in the event of an accident of any kind disabling the works of the Company supplying that district with water. Hence the suggestion of coupling the mains of adjacent districts by communications, to be used only in cases of strong necessity; but which in such cases might furnish to a destitute district a supply of water from the adjoining one in which it abounded. It is believed that very small lengths of additional piping would accomplish this, if the nearest points of approach of the independent mains were selected; and even that such connections exist already in several places, though not now in use. The subject of a different water supply for the extinction of large conflagrations assumes greater importance from the consideration that the continuous supply about to be required by law may be expected to reduce the pressure in the mains much below its present point; and may possibly even interfere with the practice of cutting off the water from a portion of a district for the purpose of increasing the supply at the spot where it is required for the suppression of a fire.

No. 2. The suggestion for small and easily handled floating engines requires little further explanation. The importance of early arrival at a fire, and the value of small and light engines for this purpose, has been already recognised in the land service, and it is believed that the greatest benefit would accrue from the extension of the same principle to that on the river by the adoption of small steamers (say of about 10 tons) with corresponding engines, and very little draught of water, which could move with rapidity to the site of a fire and hold it in check till the arrival of the present more powerful but less easily managed floats, to which the smaller vessels might serve as tenders if thought desirable.

No. 3. This suggestion points to the establishment of means of communication (by telegraph, where necessary) between every police station and the fire brigade station nearest to it, and that it should be a part of the duty of every policeman to give immediate notice of a fire to either the police station or the brigade station, whichever might be nearest to him.

I have only to add, that it will give great pleasure to the London Salvage Corps Committee, to wait by deputation on your Board in order to the fuller discussion of the subject with them personally.

I have, &c.
(signed) *Geo. W. Lovell*, Chairman.

To the Chairman
of the Metropolitan Board of Works.

(Enclosure.)

At a meeting of Offices held at the Sun Fire Office on 17th November 1871, it was:—

1st. Resolved, that it is of the highest importance for the purpose of meeting the possibility of the supply of water failing in any one district at the time of a large conflagration, that the mains of each water company's district should be furnished with a connection with the

the mains of the district of the water company or companies adjacent to it, such connection to be used only in case of need for fire-extinguishing purposes.

2nd. That in view of the large amount of property, public as well as private, accumulated on the riverside district; the inaccessibility of many parts of that district from the land side; the expediency of utilizing the river as far as possible for extinguishing, and so preventing the extension inland of fires occurring on its banks; the attention of the Metropolitan Board of Works be requested to the extension in the most efficient form of the fire-extinguishing appliances now in operation on the river. That whereas such appliances now consist chiefly of vessels and engines of great power, but which, besides the impossibility of bringing them close inshore owing to their draught of water, are in their operation subject to delay in arriving at the scene of a fire, and in the heavy apparatus with which they are supplied being brought into play, this service would be supplemented in a most valuable and at the same time inexpensive manner by the introduction of small steam vessels, freighted with steam fire engines of appropriate calibre, which would move with rapidity and facility even in shallow water and be brought promptly close to the scene of a fire, while the fire apparatus on board would be manipulated with the same ease as in the land service.

3rd. That, inasmuch as the prompt attendance of engines and escapes is of the highest importance in extinguishing fires and for the protection of life, it is expedient that more direct telegraphic communication than at present exists be opened between the police stations and the fire-engine stations in the Metropolis; and that organised arrangements should be made for the police giving immediate notice of fires to the nearest police station or fire-engine station.

— No. 2. —

Mr. *John Pollard* to Mr. *G. W. Lovell.*

Sir, 23 December 1871.

The Board have considered the suggestions contained in your letter of the 23rd November last, on behalf of the London Salvage Corps and the resolutions of the associated fire offices with reference to the means for preventing extensive conflagations in this Metropolis, such as that which recently occurred at Chicago.

The first suggestion is that the mains of the several water companies should be capable of being connected in case of need for fire-extinguishing purposes. The Board have consulted the chief officer of the brigade on this subject, and he has stated his belief that the water companies are not without means of assisting each other in cases of emergency; in any case, however, the Board considering the position of the water companies under the Act of Parliament of this year, do not deem it advisable at the present time, when the question of carrying into effect the provisions for constant supply is under consideration, to communicate with the water companies on this subject.

The second suggestion is, that with a view to utilizing the river as far as possible for extinguishing fires at the waterside, there should be provided small steam-vessels freighted with steam fire-engines, which would move with greater facility and rapidity than the floating engines now in use. The question of extinguishing fires at the waterside, and for that purpose of utilizing the river as far as possible, is one which has received much consideration at the hands of the Board, and which they have provided for at considerable cost. Perhaps, this will best be understood in figures as follows:—The value of the floating fire-engines when handed over to the Board was 3,200 *l.*; it is 11,500 *l.*, and all the appliances, such as hose, ropes, branches, chains, &c., which were formerly very deficient in quantity, have been increased in even greater proportion.

The suggestion about small steamers would seem to be based upon the assumption that a small vessel must necessarily have a lighter draught of water than a large one, which is by no means the case. Indeed, in the case of the floating engine last constructed, the reason why the builders (Messrs. Samuda) made the hull so large, was to ensure her having a light draught. Moreover, even after going to such a size, they have not thoroughly accomplished the object, and have since recommended that she ought to be lengthened.

Again, the allusion to heavy apparatus appears to the Board to be based upon a misapprehension, and to refer to the circumstances of many years ago. The Board have never purchased any of the heavy gear such as was formerly in use, and at the present moment the brigade have not one article of the old unwieldy kind remaining. All the hose and other appliances used with the floating engines have been for the last three or four years of precisely the same kind as those used with the steam and manual fire-engines on land.

This being the case, the Board trust that the fire insurance companies will agree with them that the provision of small floating engines, as suggested by the companies, is unnecessary.

The third suggestion is that there should be more direct telegraphic communication than at present exists between the police stations and the fire-engine stations in the metropolis, and that organised arrangements should be made for the police giving immediate notice of fires to the nearest police station or fire-engine station. With reference to this the Board

Appendix, No. 18.

would observe that there has been for several years direct telegraphic communication between the head-quarters of the police and the chief station of the brigade in Watling-street, but it so happens that the brigade have not in all that time had one first call to a fire from them, and the Board are therefore not encouraged to expect much help in this way, but rather to look to a further development of their own system for the purpose of obtaining early intelligence of fires.

The Board think it hardly necessary to say that they are deeply convinced of the importance of this subject, and that they will not be slow to adopt any improvement or extension of their system which experience may suggest and which the means at their disposal may enable them to carry out.

As to the suggestion that organised arrangements should be made for the police giving immediate notice of fires, the Board have only to say that such arrangements have always existed, and that they have no fault to find with the way in which they are carried out, but on the contrary, every reason to believe that the police render the brigade very efficient service in this respect.

With reference to your letter of the 18th instant on the subject of the floating engines in connection with the recent large fire at Rotherhithe, I am to state that the matter is being investigated by the Fire Brigade Committee, and that at their next meeting I shall probably receive instructions to make a communication to you in reply.

I am, &c.
(signed) *John Pollard*, Clerk.

G. W. Lovell, Esq.,
Chairman of the London Salvage Corps,
31, Watling-street.

PAPER handed in by Mr. *Tozer*, 10 July 1876.

CITY OF MANCHESTER FIRE BRIGADE.

Pay and Superannuation Allowances.

RANK.	SALARIES AND PAY.	Contributions at the Rate of Three per Cent. of Pay.	SUPERANNUATION ALLOWANCES. For 20 Years' Service and upwards, from Three-eighths to Two-thirds of Pay, according as the Watch Committee may think fit.	For less than 20, but over 15 Years, from One-fourth to One-half of Pay, according as the Watch Committee may think fit.	For less than 15, but over 10 Years, if pronounced by the Police Surgeon Incapable of performing Duties, One-fourth of Pay.	If Disabled by Injuries received in the Execution of Duty, Three-eighths of Pay.	If Killed or Dying from the Effects of Injuries received in the Execution of Duty, an Allowance of One-fourth of Pay to the Widow or Children.	GRATUITIES.
Superintendent	500 *l.* per annum	15 *l.* per annum	187 *l.* to 333 *l.* per annum.	125 *l.* to 250 *l.* per annum.	125 *l.* per annum	187 *l.* per annum	125 *l.* per annum.	
Assistant Superintendent	200 *l.* „	6 *l.* „ „	75 *l.* to 133 *l.* per annum.	50 *l.* to 100 *l.* per annum.	50 *l.* per annum	75 *l.* „	50 *l.* „	
Steam Engineer, 1st Class, after 6 years	48 *s.* per week	1 *s.* 5 *d.* per week	18 *s.* to 32 *s.* per week	12 *s.* to 24 *s.* per week.	12 *s.* per week	18 *s.* per week	12 *s.* per week.	
Ditto 2nd „ „ 3 „	44 *s.* „	1 *s.* 4 *d.* „	16 *s.* 6 *d.* to 29 *s.* 4 *d.* per week.	11 *s.* to 22 *s.* per week.	11 *s.* „	16 *s.* 6 *d.* „	11 *s.* „	For less than 10 but over 5 years' service, a fireman, if incapable of performing his duties, is entitled to a gratuity equal to 20 days' pay for each year's service.
Ditto 3rd „ on appointment	42 *s.* „	1 *s.* 3 *d.* „	15 *s.* 9 *d.* to 28 *s.* per week.	10 *s.* 6 *d.* to 21 *s.* per week.	10 *s.* 6 *d.* „	15 *s.* 9 *d.* „	10 *s.* 6 *d.* „	
Engineers, 1st Class, after 6 years	37 *s.* „	1 *s.* 1 *d.* „	13 *s.* 10½ *d.* to 24 *s.* 8 *d.* per week.	9 *s.* 3 *d.* to 18 *s.* 6 *d.* per week.	9 *s.* 3 *d.* „	13 *s.* 10½ *d.* „	9 *s.* 3 *d.* „	
Ditto 2nd „ „ 3 „	35 *s.* „	1 *s.* 1 *d.* „	13 *s.* 1½ *d.* to 23 *s.* 4 *d.* per week.	8 *s.* 9 *d.* to 17 *s.* 6 *d.* per week.	8 *s.* 9 *d.* „	13 *s.* 1½ *d.* „	8 *s.* 9 *d.* „	
Ditto 3rd „ on appointment	33 *s.* „	1 *s.* „	12 *s.* 4½ *d.* to 22 *s.* per week.	8 *s.* 3 *d.* to 16 *s.* 6 *d.* per week.	8 *s.* 3 *d.* „	12 *s.* 4½ *d.* „	8 *s.* 3 *d.* „	If a fireman die whilst serving in the force, his widow or children become entitled to a gratuity equal to 20 days' pay for each year's service.
Fireman, 1st „ after 4 years	28 *s.* „	10 *d.* „ „	10 *s.* 6 *d.* to 18 *s.* 8 *d.* per week.	7 *s.* to 14 *s.* per week.	7 *s.* „	10 *s.* 6 *d.* „	7 *s.* „	
Ditto 2nd „ „ 2 „	27 *s.* „	10 *d.* „	- - -	- - -	- - -	10 *s.* 1½ *d.* „	6 *s.* 9 *d.* „	
Ditto 3rd „ „ 1 „	26 *s.* „	9 *d.* „	- - -	- - -	- - -	9 *s.* 9 *d.* „	6 *s.* 6 *d.* „	
Ditto 4th „ „ 2 months	25 *s.* „	9 *d.* „	- - -	- - -	- - -	9 *s.* 4½ *d.* „	6 *s.* 3 *d.* „	
Ditto 5th „ on joining	24 *s.* „	9 *d.* „	- - -	- - -	- - -	9 *s.* „	6 *s.* „	
Horsekeeper, after 1 year	27 *s.* „	10 *d.* „	- - -	- - -	- - -	10 *s.* 1½ *d* „	6 *s.* 9 *d.* „	
Ditto on appointment	25 *s.* „	9 *d.* „	- - -	- - -	- - -	9 *s.* 4½ *d.* „	6 *s.* 3 *d.* „	
Messenger „	10 *s.* „	--	—	—	--	--	--	

The Firemen are allowed a day off duty, with pay, every 13 days, and they are also allowed annually seven days' leave with pay.

Appendix, No. 20.

Appendix, No. 20.

PAPER handed in by Mr. *Lovell*, 13 July 1876.

Mr. *G. W. Lovell* to Mr. *J. Pollard.*

London Salvage Corps, 31, Watling-street,
1 January 1872.

Sir,

The Committee of the London Salvage Corps request me, in acknowledging the receipt of your letter of the 23rd ultimo, to express their sincere regret that the Metropolitan Board of Works decline to entertain favourably any of the suggestions of the associated fire offices for the better protection of London against fatally extensive conflagrations as submitted to the Board in my letter of the 23rd November. This regret is the greater, because the considerations which have influenced the Board (and which are most courteously detailed) fail altogether to impress the Committee of the Salvage Corps.

They fear there is a very slender foundation for the belief of the chief officer of the brigade, that the water companies are not without means of assisting each other in cases of emergency; the only means the Committee can trace are communications at two points between the mains of independent water companies, viz., one between the mains of the Grand Junction and West Middlesex Companies, and one between those of the Lambeth and Southwark Companies. There may also be one between the New River and West Middlesex, but information is difficult to obtain. These communications were established many years ago for a temporary purpose, but they have been so long disused that there is no likelihood of their being now available on any sudden call, though their existence affords an evidence that the arrangement suggested by the offices was not one of any impracticable character.

With respect to the floating engines, their power is not for a moment questioned, but it is this very power which necessitates so much bulk weight and draught of water that, as was recently seen, more than 200,000 *l.* worth of property at the riverside was destroyed, because not one of the four floating engines could be brought for an hour and a half to play on the fire, though the Committee have no reason to doubt that every effort was made by the brigade. The existing floats are, in effect, a fleet of ships of the line, without any light frigates or gun boats, and the Committee feel persuaded that the difference between getting a ship under weigh and starting a boat would scarcely be greater than that between bringing into action one of these powerful floats and a lively little steamer drawing from 14 to 18 inches of water, capable of being manned by three men, and the branch managed by one.

The Committee feel no surprise at learning that a first call has never been received through the circuitous route of a previous police message to Scotland Yard. Their suggestion was only for direct communication from each police station to the fire brigade station nearest to it, and that the police should have instructions to give immediate notice to the one or the other. The existing arrangements of the brigade would probably be sufficient for all the rest. The present inadequacy of police calls to fire is evidenced by the immense number of supplementary calls from strangers, the payments for which have sufficed to produce a William Anthony. The Committee request the Board to receive the assurance that they are fully persuaded of the Board's earnest desire to adopt the best arrangements in their power for the protection of London from fire. They only regret that any difference of opinion should exist as to what those arrangements should be.

I am, &c.
(signed) *G. W. Lovell*, Chairman.

John Pollard, Esq.,
Metropolitan Board of Works.

Appendix, No. 21.

PAPERS handed in by Mr. *Swanston*, 13 July 1876.

CROWN STREET.—Closed 24 December 1870.

13 January 1871.—Messrs. Edwards & Roberts, furniture dealers, 14, Carlisle-street, and 14, Great Chapel-street, Soho. A brick and timber building of four floors, about 90 × 30 feet, burned out and roof off; stables and store rooms adjoining, of two floors, about 30 × 40 feet, burned out, and roof off.
Three horses burned to death; and
A house of 10 rooms burned out, and roof off.
Ditto - - ditto - - ditto.
Sixteen other damages.

2 February 1871.—Messrs. Castell & Brown, confectioners, 4, George-yard, Soho. A brick and timber building of four floors, about 40 × 40 feet, burned out, and roof off.
Nineteen other damages.

27 April 1871.—J. Muggeridge, corn dealer, 4, Howland-mews, Howland-street, Fitzroy-square. Stables with lofts over, about 25 × 30, burned out, and roof off.
Five other damages.

28 April 1871.—Messrs. Heal & Son, upholsterers, &c., 195 to 198, Tottenham Court-road. A brick building of three floors, 45 × 30 feet, and a brick building of two floors, 60 × 40 feet, burned out, and roofs off. A brick building of 2 and 3 floors, 100 × 30 feet, and hair stores and dressing rooms, about 70 × 30 feet, burned out, and roofs off. Loft over stable, 30 × 15 feet, severely damaged by fire, &c.
One other damage.

22 August 1871.—F. Halls, carver and gilder, 65, Berwick-street, Soho. Building of two floors, 40 × 20 feet, burned out, and roof off.
Three other damages.

6 December 1871.—Messrs. Maples & Co., upholsterers, &c., 143 to 147, Tottenham Court-road, Nos. 4 to 8 Tottenham-place. Houses of three floors, about 150 × 40 feet, burned out, and roofs off; rest of buildings damaged by fire, heat, &c.
Fourteen other damages.

1 November 1872.—Oxford Music Hall. Body and balcony of hall nearly burned out, and roof destroyed.
Four other damages.

18 January 1873.—H. Lyons, clothier, 3, Oxford-street. House of eight rooms and contents burned out, and roof off.
Two other damages.

2 March 1873.—W. H. Morton, private, 20, Frith-street, Soho. First, second, and third floors nearly burned out, and part of roof off; rest of house, of 18 rooms, severely damaged by fire, heat, &c.
Two other damages.

20 March 1873.—Messrs. Bretnall, tracing paper makers, Huntley-street, Tottenham Court-road. Two brick buildings, one of two floors, 60 × 12, the other of one floor, 35 × 12, burned and fallen down. One horse burned to death.
Two other damages.

20 June 1873.—G. Austin, coachbuilder, 1 Duck-lane, Soho. Brick and timber building of three floors burned out, and roof off. Three horses burned to death.
Seven other damages.

25 July 1873.—Messrs. Merryweather, fire-engine makers, Long Acre. Building of three floors, 36 × 25, burned and fallen down, and a brick building of three floors, 40 × 30, burned out, and roof off.
Five other damages.

28 September 1873.—L. Hasluck, watchmaker, 254, Tottenham Court-road. A house of 10 rooms and back workshop very severely damaged, and part of roof off.
Two other damages.

Appendix, No. 21.

3 October 1873.—T. H. Jones, coffee-rooms, 52, Howland-street, Tottenham Court-road. A house of 20 rooms nearly burned out.
Three other damages.

28 June 1874.—P. Leberzneroes, coffee-house, 6, Hayes-court, King-street, Soho. Three upper floors burned out, and roof off; rest of house, of 10 rooms, severely damaged.
Seven other damages.

4 July 1875.—Messrs. Hewetson & Milner, upholsterers, 10, Chenies-street, Tottenham Court-road. A brick building of three floors, about 45 × 25. Two upper floors burned out, and roof off; lower part severely damaged by heat, &c.
Three other damages.

FARRINGDON STREET.—Closed 24 May 1873.

29 December 1873.— Lloyd's Printing Offices, Salisbury-square, Fleet-street. A brick building of three floors, about 60 × 40 feet, burned out, and roof off. Top part of front house burned out; most part of roof off; lower part of house severely damaged by fire, &c.
Six other damages.

20 May 1874.—W. Bethridge, veneer cutter (and several other occupiers), Nag's Head-yard, Leather-lane. A building of four floors, 130 × 35 feet, about 90 feet burned out and roof off; rest of building very severely damaged by fire, &c.
Eight other damages.

26 June 1874.—Commercial-buildings, Gray's-Inn-road: various occupiers (*most of these people had removed from Leather-lane after the fire*). Workshops of five floors, about 60 × 40, burned out, and roof off.
Damage to St. Alban's School, Baldwin's-gardens.

25 June 1875.— M. Bell, bookbinder, 18, Cursitor-street, Chancery-lane. A brick building of four floors, 68 × 30 feet, and one of two floors, 45 × 15 feet, burned out, and roofs off. Dwelling house, offices, and stock in yard very severely damaged.
Twelve other damages.

6 January 1876.—T. N. Egleton, bookbinder, 12, Broadway, Ludgate-hill. A brick building of four floors, about 65 × 40 feet, nearly burned out, and roof off.
Sixteen other damages.

2 July 1876.—1, Cursitor-street, Chancery-lane (in course of construction). A brick building of five floors, 45 × 40 feet, burned out, and roof off.
Ten other damages.

LONDON SALVAGE CORPS.

Recapitulation and Detail of Arrangements agreed upon by the Committee at its Meetings, on 19th and 26th July and 27th September 1875, upon the Reports of the Sub-committee on Pensions.

These arrangements to take effect from and after 1st October 1875.

The division of the men employed in the corps into permanent men and auxiliaries, as heretofore, will be abrogated, and in place thereof the men will be divided into three classes.

First Class Men.—The men hitherto called permanent men will, in future, be denominated first-class men, and will receive the same pay and allowances as heretofore. The duties of this class will be those hitherto performed by the permanent men, with such alterations as may from time to time be required.

Second Class Men.—The following men from among the present auxiliaries will, in future, be second-class men.

G. Richardson.	G. Legg.	H. Goddard.
G. Mallinson.	T. Benton.	T. Thorogood.
C. Bradley.	G. Thorn.	T. Johnson.
T. Mitchell.	J. Cullum.	J. Barry.
W. Harrison.	A. Neill.	H. Jackson.
W. Darby.	W. Laing.	J. Burns.
J. Bilton.	J. Morgan.	J. H. White.

Their pay will commence at 33 *s.* per week, and will be increased 1 *s.* per week per annum, until it reaches 35 *s.* per week.

The number of men in this class will be ultimately reduced to 20.

Third

Third Class Men.—All men in future appointed to service in the corps will be appointed as third class men; their pay will commence at 28 *s.* per week, and will be increased 1 *s.* per week per annum, until it reaches 33 *s.* per week.

The following men will be retained as auxiliaries upon the same terms of pay as at present:—

W. Merrygold.	F. Worrow.	A. Stone.
R. Skinner.	W. Hutchinson.	G. Harding.
J. Boreham.	J. Robinson.	W. Boast.
W. Bye.		

T. Colkett will be retained as an auxiliary, but with the same rate of pay as the second class men.

The duties of the second and third class men and of the men retained as auxiliaries will be those hitherto performed by the auxiliaries, with such alterations as may from time to time be required.

The pay of a man will not be increased without a recommendation from the superintendent that he has so conducted himself and so performed his duties as to render him deserving of such increase of pay.

Vacancies in the first class will be filled up by selection from the men of the second class, and those arising in the second class by selection from the third class.

The clothing allowed in each year to the first class men will be, as heretofore, allowed to the permanent men; that allowed annually to the second and third class men, and to the auxiliaries, will in future consist of—

One pea jacket.	One pair of boots.
One pair of trousers.	One cap.

All the officers and men in the first, second, and third classes will be under the charge of the medical officer of the corps.

The foremen, deputy foremen, and the men of the first, second, and third classes will be required to effect insurances upon their lives, to the undermentioned amounts, with the Provident Clerks' Mutual Life Office, or such other insurance company as the committee may require.

The committee will pay one-half of the amount of the premiums required to effect these insurances, the remaining half being paid out of a fund to be raised by weekly contributions from the above-mentioned officers and men, to the amounts also stated below:—

Foremen, 100 *l.*, to contribute 3 *s.* per month.
Deputy foremen, 75 *l.*, to contribute 4 *d.* per week.
First, second, and third class men, 50 *l.*, to contribute 3 *d.* per week.

In the event of an officer or man retiring from the corps, or being dismissed, he may be required to give up his right to the half of the insurance paid for by the committee; and to this end the before-mentioned officers and men will be required to sign a letter, acknowledging their indebtedness to the committee to the extent of the half premium paid for them.

The committee are empowered to grant pensions upon the following scale, and during their pleasure, to such of the officers and of the men of the first, second, and third classes as may become incapable of continuing in the service in consequence of sickness, injury, or old age.

For 15 and under 20 years' service, one-third to one-half of the pay received at the time of superannuation.

For 20 years' service and upwards, two-fifths to two-thirds of the pay received at the time of superannuation.

If an officer or man be disabled by accident in the discharge of his duty before his service shall amount to 15 years, such service to count as 15 years, and he to receive a pension accordingly.

In considering the pension to be awarded to any man, the term of his service shall be deemed to have commenced at the date of his first employment in the corps whether as a permanent man or as an auxiliary.

Watling-street, 4 October 1875. *Chas. Rouse Browne*, Hon. Sec.

Appendix, No. 22.

Appendix, No. 22.

PAPER handed in by Sir *James Hogg*, a Member of the Committee.

METROPOLITAN BOARD OF WORKS.

REPORT by the Chief Officer of the Fire Brigade on the Letter from Mr. *Lovell*, on behalf of the Associated Fire Offices, relative to the Operations of the Brigade at the large Fire in Rotherhithe-street on the 14th of December 1871, and especially with reference to the time which elapsed before the Floating Engines were brought into Action.

Metropolitan Fire Brigade,
Chief Station, Watling-street, E.C.,
London, 8 January 1872.

To the Fire Brigade Committee.

With reference to the subject of Mr. Lovell's second letter, dated the 18th ultimo, I have to make the following report:—

Mr. Lovell states—"The fire is reported to have occurred at 10 minutes to 5 o'clock, and the alarm appears to have been promptly given by the police, yet on inquiry the committee are informed that it was not till a quarter past 6, or after a delay of an hour and 25 minutes, that the first floating engine (from Cherry Garden Pier, about three-quarters of a mile off) got to work."

In this paragraph there are three distinct statements, two of which are certainly correct, and the third probably so, but I most respectfully submit that the sentence as it stands conveys an idea absolutely wrong. The fire has since been ascertained by us to have been burning at the time named, but how long previously we have no means of knowing, and the call was promptly given by the police; that is to say, after the police had been informed that there was a fire, they took prompt measures, as they always do, to let our nearest station know, but the call was essentially and in all respects a thoroughly bad call, as every call for a light must from its very nature be.

The correct version of the matter is as follows:—

At 5.13 A.M. on the 14th of December 1871, a call was given at the head-quarter station by a policeman from London Bridge, for a light showing eastward, and we immediately informed the Eastern and Southern Districts of it by telegraph, and asked them where they thought it was. It was evidently not far from the river, and they both answered, "Wait," and the Eastern District despatched several engines to the direction in which it appeared to be. In the meantime all the districts were on the alert, and several steam and manual engines turned out, but at first did not know on which side of the river it was.

A few minutes later a message was received from the south side to say that the fire was at Bull Head Dock, Rotherhithe, and immediately after a message from the Eastern District confirmed the intelligence by saying that their engines had returned, having gone down to the river side and found that it was on the southern shore.

A very large force which was all in readiness was then despatched, including three floating engines, one from the Platform, Rotherhithe, one from Limehouse Reach, and one from Southwark Bridge.

The land engines of course arrived before the floats, and when the first, namely, that from Rotherhithe Station, reached the spot, the officer found the wharf well alight and the roof off.

At the same time the flames from the wharf had reached the side wall of the granary adjoining, which contained no less than 65 windows, 13 of which were on a level with the gutter-plate, 13 more on a level with the apex of the roof, and the remainder over these.

There was a strong wind blowing from the south-west at the time, and driving the flames directly on the 65 windows mentioned.

There was no turncock present, so the officer drew a plug himself, but found no water. He was then setting in his engine to get some water which lay in the lower bed of the dock, when a steam-engine arrived and took his place, getting to work instantly, and two other steam-engines got water out of the Surrey Canal Dock at a considerable distance. By this time the fire had spread through several floors of the granary.

I went myself from this station with the first party, and, the roads being clear, the engine must have travelled at very nearly the rate of 20 miles an hour, so that more than 12 minutes cannot have been occupied in the journey, or at the very outside, 15 minutes; and, as I crossed over the Surrey Dock Bridge, I saw the flames rushing with great fury from every one of the 65 windows towards the wharf, and as far as I could judge, from about half of those on the river front and the street front; and the remainder of the building was completely

pletely enveloped in dense smoke, so that according to my judgment, the granary must then have been alight almost from end to end. Certainly, some barges, which lay along the eastern or furthest end of the river front, were then on fire.

It being impossible for horses to pass along the street front in consequence of the intense heat and the heaps of falling materials, engines were despatched round the docks, a distance of about three miles, and, after 48 minutes from the arrival of the first engine at the fire, obtained a very small supply of water from a plug on a 4-inch pipe of the Kent Company's works to the eastward, and later on water was found in a basin or small pond in a private yard.

The floating-engine from the platform, Rotherhithe, arrived in reasonable time, being propelled by her own pumps, which are ample for giving the vessel steering way, and being assisted by a very strong ebb-tide. An anchor was let go abreast of the granary, and, just as the vessel began to ride to it, a barge coming down the river with the full force of the tide, struck her and broke her adrift. The pilot and all on board made every possible exertion, and, owing to the great strength of the tide at the time, there was no doubt some delay in berthing the vessel again, but I submit that this was a simple casualty such as must occasionally happen in a crowded river. The officer in charge of this float states that the pumps were at work on the fire with five deliveries by six o'clock, and, if his statement is correct, it would seem that the time taken by the informant of the Salvage Corps Committee must have been that of the opening of the last delivery which must have been considerably after that of the first; but as to the exact moment I can offer no opinion, as the thoughts and energies of all concerned were employed in getting to work as quickly as possible, and the labour of dragging line after line of hose across a strong tide, over a great expanse of very soft mud five or six feet in depth, and round and across several barges, was quite enough to occupy us fully during the early part of the proceedings.

If, however, there was one individual likely to be well informed, on this point, it certainly would be the officer on board the D float, who never left the vessel, and whose duty was more of a routine kind, such as preparing the engines and pumps, and starting the deliveries as each line of hose was ready.

The letter, after mentioning 1 hour and 25 minutes, goes on to state that two other floats arrived still later, and if this means later than the arrival of the D float it is correct, but if it means, as it probably does, later than the getting to work of the D float, it is quite wrong.

One of these floats is merely a barge, with a land steamer on board, and it lies at a buoy in Limehouse Reach, one mile and half-a-quarter from the scene of the fire. A tug was laying alongside, with steam up, and already for starting, and the barge was immediately placed in tow, and proceeded with all possible speed. The B float lies at Southwark Bridge, 2¼ miles from the scene of the fire, and, being in complete readiness, also proceeded with all possible speed. These vessels arrived almost at the same moment, which is accounted for by the one from Southwark having a very strong tide in her favour, and the other having it against her.

It is said in the letter that the river was "valueless in consequence of the absence of all means of utilising it," but the condition of the granary on the afternoon of the same day practically contradicts this statement. It is quite true, as the letter says, that "at an early stage the fire had reached such an intensity, that all hopes of saving any of the buildings involved was at an end," but this is hardly a frank way of stating the matter, as it omits any mention of the contents, and the fact is undoubted, that there was an enormous salvage after this fire, indeed, such a salvage, that one equalling it cannot be remembered by myself or the oldest officers of the brigade. This salvage, in my opinion, if properly worked, which has not been the case, would realise a very large sum, and, consequently, allow a considerable margin on the 200,000 *l.* mentioned.

In the letter it is said that "the Committee feel fully persuaded that had small, light, easily-handled floating engines, such as suggested in my former letter, been available, their early assistance would have confined the fire to the manure wharf, and have saved the enormous King and Queen Granaries altogether;" but I would observe, that our barge is precisely described in these terms, being merely an almost empty shell, small, light, and very easily handled, and that an examination of the berth in which the pilot placed her shows conclusively that the Salvage Corps Committee are mistaken in their views of what can be done by vessels of this kind under such circumstances as those attending the late fire at Rotherhithe.

The concluding paragraph states that "the Committee are informed that of the four floating engines, three alone have any provision for locomotion, and that the locomotive machinery of two out of these had been crippled previous to the occurrence of the fire in question, and they should strongly urge on your consideration the importance of attaching to each floating engine a steam tug, so long as its own power of locomotion is either wanting or imperfect;" but it ought to be remembered that formerly only one vessel had propelling power, and that of the two added by the Board, one has paddles and the other twin screws, and that the fact of the locomotive machinery of two out of the three being crippled, which exactly describes the state of things, is very different from their being disabled, and did not in any way affect the results of this fire, except perhaps for a few minutes after the D float was struck.

When the propelling machinery of the D float broke, the matter was brought before the Committee, and orders were given for the repairs, and in the meanwhile arrangements were

Appendix, No. 22.

made on board, which ensured a moderate, though, of course, not a fully satisfactory rate of speed, and which certainly fulfilled their purpose fairly on the occasion in question.

When one of the screws of the A float was broken through some cause still unknown, but probably by striking an anchor or some obstruction in the bed of the river, the matter not involving much expense, I immediately ordered the builders to cast another screw without waiting to bring the matter before the Committee, and in the meanwhile the vessel was, of course, able to travel about very well.

Even with the greatest care I know of no way of avoiding occasional accidents, and I submit that in both these cases all proper means were adopted, and that no blame can be attributed to any one.

As to the suggestion about keeping a tug in attendance, I can have this done, if the Committee desire it, at a cost of 6 *l.* a day, which is the lowest rate, but I certainly do not think that the circumstances of the case would justify me in recommending the adoption of such a course.

Having thus answered, I trust satisfactorily, the several allegations contained in the letter from the Salvage Corps Committee, I desire to mention that a strict investigation has taken place here concerning the whole transaction, and that every one was examined who could give any information about it; but although I endeavoured in every way in my power to get Mr. Lovell to give me the assistance of any one who could support the statements in his letter, I was unable to succeed in inducing him to do so, as he said it would "put the matter in a false position," and he added that "the Salvage Corps Committee impute no blame or neglect to any one, and have therefore no cause to support by witnesses." There can be very little doubt that Mr. Lovell intended this as an act of courtesy, but I am of opinion that the matter is in a false position now, and that it would have been more satisfactory to all parties if the investigation had not been altogether one-sided. However, I have endeavoured to give the results faithfully in the foregoing report, and, if the Committee wish for further information, I can supply them with the evidence of all the witnesses.

Before concluding, I have to lay before the Committee the following statement which has been made to me by the principal officers of the brigade, with a view to its being used as a sort of respectful protest against the action taken by the Salvage Corps Committee in this matter.

"We beg to state our opinion that as long as insurance companies have so little regard to the risks they take, so long will London be subject to these large fires, no matter what means may be adopted for extinguishing them, in confirmation of which we wish to mention what has happened in this case. The King and Queen Granary was until very recently a building by itself, separated from the Manure Wharf by an open space varying from 18 feet to 33 feet in width, but at the time of the fire this space had been filled up by a new building, communicating at both ends with the old building by means of iron doors, some of which were found open, and the end wall of the new building was pierced with no less than 65 windows looking on and communicating with this wharf, in which it was well known that fires had taken place on the 15th of May and the 19th of August 1870, from spontaneous ignition.

"As to the water from the street plugs, there is only a 4-inch pipe running along the street at that part, and this is at the extremity of the Kent Company's supply for that neighbourhood. Water could be obtained from only one plug, and even that was 48 minutes after the first engine was ready for work, and the supply was very deficient, but this is what always did exist in that neighbourhood, and therefore can be nothing new to the insurance companies, or to those who survey their risks."

Such is the statement made to me, and I have only to add to it that in my opinion the King and Queen Granary contained the following elements of danger, namely, its site, large area, height, great cubic capacity, weak external walls, dangerous premises in the neighbourhood, numerous windows, absence of good internal divisions, quantity of stock, inaccessibility, defective supply of water on the land side, difficulty of approach on the water side, and inaccessibility of any part of the river for use by the land steamers even at high water, which last-mentioned circumstance is still the case, notwithstanding the serious warning which all interested in the preservation of property in that neighbourhood have so recently received.

As a summary of the whole question, I would submit that the fire at Rotherhithe happened under circumstances which occur regularly twice every day, and last each time about eight hours, that under such circumstances there are extremely great practical difficulties in making the river useful; that on the occasion now under consideration the practical difficulties were overcome as quickly as the nature of the time, place, and circumstances permitted, and could not have been overcome more rapidly, or even in a different manner, if we had been provided with any other class or description of floating fire engines; that the insurance companies who speculated on the dangerous premises, ought to have been aware that, for 16 out of every 24 hours, those premises were liable to be placed in the utmost peril by any fire occurring either in them, or anywhere in the immediate neighbourhood; that, being so aware, they had no right to expect to find, after a fire, so good a salvage as that actually made by us, though through their own mode of proceeding not fully realised by them; that since the time of their entering into the speculation, the power of the brigade has been increased by the improvement of one floating fire engine, and the addition of another, both the best and most serviceable of their kind hitherto made or designed; and lastly, that if a storm of indignation is brewing among the shareholders of the

the insurance companies, who are the real sufferers in this case, it should be directed neither towards the Board, who have provided improved and additional appliances, nor towards the brigade, who work these appliances to the best of their ability; but towards their own officials, either those who have imperfectly surveyed the risk, or those who, having received sound reports of complete surveys, nevertheless speculated so largely, and, as the result has proved, so disastrously with the money entrusted to their care.

I cannot doubt that this is a matter which will one day assume very great prominence in connection with the subject of extinguishing fires, and I should, therefore, most respectfully recommend the Committee to make use of the present opportunity for bringing it in a friendly manner under the notice of those who are the persons really interested.

I present rough drawings, showing the position of the floats at work, and, to a certain extent, the construction of the building, and if this matter is to go any further, I should strongly recommend the Committee to visit the place on a falling tide, and judge for themselves whether the result of our exertions at the late fire has been, as the Salvage Corps Committee assert, a failure, or, as the officers of the Fire Brigade affirm and maintain, a success greater than, under the circumstances, could have been reasonably anticipated.

Eyre M. Shaw, Chief Officer, M.F.B.

Appendix, No. 23.

PAPER handed in by Captain *Harris*.

METROPOLITAN POLICE FIRE BRIGADE.

RETURN showing the Number of STEAM and HAND ENGINES, and likewise the Number of MEN Proposed at the several STATIONS named.

District.	STATION.	Number of Engines.		RANK.								TOTAL
		Steam.	Hand	Superintendent.	Engineers.		Firemen.				Boys.	
					1st Class.	2nd Class.	1st Class.	2nd Class.	3rd Class.	4th Class.		
No. 1.	Bethnal Green	–	1	–	–	–	1	2	1	1	2	7
	Mile End	1	1	–	1	1	2	2	2	2	2	12
	Bow	–	1	–	–	–	1	1	1	2	2	7
	Poplar	1	1	1	1	1	2	2	2	2	2	13
	Shadwell	1	1	–	1	1	2	2	2	2	2	12
	"C." Float	1	–	–	1	1	1	1	1	1	–	6
	West Ham	–	1	–	–	–	1	1	2	1	–	5
	Plaistow	–	1	–	–	–	1	1	1	–	–	3
	Great Ilford	–	1	–	–	–	1	–	–	1	–	2
No. 2.	Watling-street	2	3	1	2	2	5	5	5	6	3	29
	Whitechapel	1	2	–	1	1	3	3	3	4	3	18
	Bishopsgate	1	1	–	1	1	2	2	2	2	2	12
	Shoreditch	1	1	–	1	1	2	2	2	2	2	12
	Custom House	–	–	–	–	–	4	–	–	–	–	4
	Post Office	–	–	–	–	–	6	1	–	–	–	7
	St. Luke's	1	1	–	1	1	2	2	2	2	2	12
	Clerkenwell (Farringdon-road)	1	2	–	1	1	3	3	3	4	2	17
	"D." Float	–	–	–	1	1	1	1	1	1	–	6
No. 3.	Downham-road	1	1	–	1	1	3	3	3	4	2	17
	Islington	1	1	–	1	1	2	2	2	2	2	12
	Stoke Newington	–	1	1	–	–	1	1	1	2	2	8
	Hackney	–	2	–	–	–	2	2	2	4	2	12
	Lea Bridge-road	–	1	–	–	–	1	1	–	–	–	2
	Woodford	–	1	–	–	–	1	1	–	–	–	2
	Waltham Abbey	–	1	–	–	–	1	1	–	–	–	2
No. 4.	Chandos-street	1	1	–	1	1	2	2	2	2	2	12
	Holborn	1	1	1	1	1	2	2	2	2	2	13
	Portland-road	1	1	–	1	1	2	2	2	2	2	12
	Highgate (Kentish Town	–	1	–	–	–	1	2	1	1	2	7
	St. Pancras (Pratt-street)	–	1	–	–	–	1	2	1	1	2	7
	Holloway (Seven Sisters-road)	–	1	–	–	–	1	2	1	1	–	5
	Edmonton	–	1	–	–	–	1	1	–	–	–	2
	Enfield	–	1	–	–	–	1	1	–	–	–	2
	Southgate	–	1	–	–	–	1	1	–	–	–	2

RETURN showing the Number of Steam and Hand Engines, &c.—*continued.*

District.	STATION.	Number of Engines.		RANK.								TOTAL.
					Engineers.		Firemen.				Boys.	
		Steam.	Hand.	Superintendent.	1st Class.	2nd Class.	1st Class.	2nd Class.	3rd Class.	4th Class.		
No. 5.	Regent-street	1	2	–	1	1	3	3	3	4	2	17
	Baker-street	1	1	1	1	1	2	2	2	2	2	13
	St. John's Wood, Finchley road.	–	2	–	–	–	2	2	2	4	2	12
	Hampstead	–	1	–	–	–	1	–	2	–	–	3
	Edgware	–	1	–	–	–	1	1	–	–	–	2
	Barnet	–	1	–	–	–	1	1	–	–	–	2
No. 6.	Westminster	1	2	1	1	1	3	3	3	4	2	18
	Brompton	–	2	–	–	–	2	2	2	2	2	10
	Fulham	–	2	–	–	–	2	2	2	2	2	10
	Kensington	1	1	–	1	1	2	2	2	2	2	12
	Paddington	1	1	–	1	1	2	2	2	2	2	12
	Notting Hill	–	2	–	–	–	2	2	2	4	2	12
	Hammersmith	–	1	–	–	–	1	2	1	1	–	5
	Brentford	–	1	–	–	–	1	1	–	–	–	2
	Hampton	–	1	–	–	–	1	1	–	–	–	2
	Staines	–	1	–	–	–	1	1	–	–	–	2
	Uxbridge	–	1	–	–	–	1	1	–	–	–	2
	Hanwell	–	1	–	–	–	1	1	–	–	–	2
	Harrow	–	1	–	–	–	1	1	–	–	–	2
	"A" Float	–	–	–	1	1	1	1	1	1	–	6
No. 7.	Waterloo-road	1	1	–	1	1	2	2	2	2	2	12
	Kennington	1	2	1	1	1	3	3	3	4	2	18
	Brixton	1	1	–	1	1	2	2	2	2	2	12
	Clapham	–	2	–	–	–	2	2	2	4	2	12
	Tooting	–	2	–	–	–	2	2	2	4	–	10
	Wandsworth	–	2	–	–	–	2	2	2	4	–	10
	Battersea	–	1	–	–	–	1	1	1	2	–	5
	Richmond	–	1	–	–	–	1	1	–	–	–	2
	Kingston	–	1	–	–	–	1	1	–	–	–	2
	Croydon	–	1	–	–	–	1	1	1	2	–	5
No. 8.	Southwark	1	1	1	1	1	2	2	2	2	2	13
	Tooley-street	1	1	–	1	1	2	2	2	2	2	12
	Rotherhithe	–	2	–	–	–	2	2	2	4	2	12
	Old Kent-road	1	1	–	1	1	2	2	2	2	2	12
	Deptford	1	1	–	1	1	2	2	2	2	2	12
	Greenwich	–	2	–	–	–	2	2	2	4	2	12
	Blackheath	–	1	–	–	–	1	1	1	2	–	5
	Lewisham	–	2	–	–	–	2	2	2	4	–	10
	Woolwich	–	2	–	–	–	2	2	2	4	–	10
	Camberwell	–	2	–	–	–	2	2	2	4	–	10
	Dulwich	–	1	–	–	–	1	1	1	2	–	5
	Sydenham	–	2	–	–	–	1	1	1	2	–	5
	Bromley	–	1	–	–	–	1	1	–	–	–	2
	Bexley	–	1	–	–	–	1	1	–	–	–	2
	"B" Float	–	–	–	1	1	1	1	1	1	–	6
	Depôt	2	8	–	–	–	–	–	–	24	6	30
	TOTAL	30	102	8	31	31	135	129	108	165	86	693

Appendix, No. 24.

PAPER handed in by Captain *Harris*.

Appendix No. 24.

METROPOLITAN POLICE.

RETURN of the Total Number of POLICE STATIONS within the METROPOLITAN POLICE DISTRICT, the Number within, and the Number beyond the Boundary of the METROPOLITAN BOARD of WORKS.

Police Division.	Total Number of Police Stations.	Number within the Boundary of the Metropolitan Board of Works.	Number beyond the Boundary of the Metropolitan Board of Works.	REMARKS.
A	2	2	—	
B	3	3	—	
C	2	2	—	
D	2	2	—	
E	3	3	—	
G	2	2	—	
H	2	2	—	
K	15	7	8	
L	2	2	—	
M	2	2	—	
N	15	5	10	
P	13	10	3	
R	13	8	5	
S	12	3	9	
T	16	4	12	
V	10	4	6	
W	10	4	6	
X	14	4	10	
Y	13	5	8	
THAMES	1	1	—	
TOTAL - -	152	75	77	

Metropolitan Police Office,
4, Whitehall-place,
19 July 1876.

W. Harris,
Chief Inspector.

Appendix, No. 25.

PAPER handed in by Mr. *Yelland.*

SALVAGE COMMITTEE REPORT FOR 1875.

Appendix, No. 25.

In reviewing the transactions of the past year, the Salvage Committee refer with regret to the great increase of fires, many of which have resulted in serious loss, in one or two instances, cause supposed to have been wilful to cover theft.

The short supply of water so seriously felt at the fire in Stone-street in September last, has been specially brought under the notice of the Water Committee, who have undertaken to remedy the evil with all dispatch.

The storage of petroleum and other lubricating oils continues to have the serious attention of the Committee.

The Committee have to report that a large number of the delivery doors of warehouses and sheds have, under the inspection of their secretary, been so constructed as to give the Fire and Salvage Brigades easy access, and shortly anticipate few will be left undone.

In addition to the extra heavy duties of the Salvage Corps, 2,777 visits have been made to warehouses and sheds. Out of this number, 129 were found in a bad state, and 112 since repaired.

The expenditure for the year corresponds in several items with the preceding one, but though the balance is smaller, it must not be overlooked that, for the first time, no assessment on the offices has been made. This arises in consequence of the large number, 368 fires, of which 34 proved serious.

The Committee have to record with sincere regret the loss they have sustained in the unexpected death of Mr. Henry Thomson, Secretary of the Liverpool and London and Globe Insurance Company, and one of the principal members in re-constituting the corps of this Committee in the year 1866.

The Committee also have to record the retirement of Mr. John Semple, secretary to the Lancashire Insurance Company, and the addition of the Alliance and Northern as members.

The Committee record with much satisfaction the great energy and courage displayed by their superintendent, officers, and men, in their trying duties during the last 12 months.

W. H. Andersson, Chairman,
Liverpool, 20 January 1876.

R. C. Yelland, Sec. and Supt.,
Chief Station, Hatton Garden.

FIRES IN LIVERPOOL FROM 1ST JANUARY TO 31ST DECEMBER 1875.

367 FIRES; 30 CHIMNEYS AND FALSE ALARMS.

TRADE OR PROFESSION.	Slightly Damaged.	Considerably Damaged.	Totally Destroyed.	SUPPOSED CAUSE OF FIRE.	TRADE OR PROFESSION.	Slightly Damaged.	Considerably Damaged.	Totally Destroyed.	SUPPOSED CAUSE OF FIRE.
Alms Houses	1	–	–	Fire, spark from.	Brush Makers	1	2	–	Unknown.
Asylum, Boys'	1	–	–	Unknown.	Builders	–	1	–	„
„ „	1	–	–	Boiler, overheat of.	Butcher's	1	–	–	Fireworks.
Bakers	2	–	–	Oven, overheat of	Cabinet Makers	–	1	–	Unknown.
„	1	–	–	Flue, defect in	Chemist	1	–	–	Boiling solution.
„	1	–	–	Hot ashes.	„	1	–	–	„ ointment.
„	1	–	–	Gas.	„	1	–	–	Candle.
„	1	–	–	Hearth, defect in.	Chandlers, Ship	1	–	–	Light thrown down area.
Bank	1	–	–	Flue, defect in.	„ „	1	–	–	Unknown.
Barracks	1	–	–	Gas.	„ Tallow	1	–	–	Candle.
Bazaar Stall	1	–	–	„	Clothiers	1	–	–	Hot ashes.
Boot Makers	–	1	–	Doubtful.	Coach Builders	1	–	–	„
„	1	–	–	Unknown.	„	1	–	–	Spontaneous ignition.
Bridge, Canal	1	–	–	Pitch pot boiling over.	Coal Dealers	1	–	–	Flue, defect in.
„ Railway	1	–	–	Gas.					

Trade or Profession.	Slightly Damaged.	Considerably Damaged.	Totally Destroyed.	Supposed Cause of Fire.
Coke Dealers	1	1	–	Spontaneous ignition.
Confectioners	1	–	–	Unknown.
Coopers	1	–	–	Fire, spark from
Cotton Dealers (damaged)	5	–	–	Kiln, overheat of
" "	1	–	–	Matches, children playing with.
" "	–	1	–	Unknown.
" "	1	–	–	Cotton from fire not extinguished.
Cotton in Yard	–	–	1	Unknown.
Dining Rooms	1	–	–	Flue, defect in.
" "	1	–	–	Chimney, spark from
Dock Quay	1	–	–	Smoking.
" "	2	–	–	Donkey Engine, spark from.
" "	3	–	–	Chimney, spark from.
" "	1	–	–	Spontaneous ignition.
" "	1	–	–	Boiler, overheat of.
" "	1	–	–	Matches.
" "	1	–	–	Tar-pot boiling over.
Drapers	2	–	–	Lighted paper.
"	2	–	–	Gas.
"	1	–	–	Matches.
"	2	–	–	Smoking.
Drysalters	–	1	–	Unknown.
Earthenware Dealer	1	–	–	Matches, children playing with.
" "	1	–	–	Incendiary.
Eating-house	1	–	–	Lighted paper.
Engineers	1	–	–	Unknown.
"	1	–	–	Fire, spark from
Farms	1	–	–	Smoking.
"	1	–	–	Lightning.
Fishmongers	1	–	–	Stove pipe, overheat of
Flour Dealer	1	–	–	Gas.
"	1	–	–	Flue, defect in.
"	1	–	–	Fireworks.
"	1	–	–	Lighted paper.
Fruiterers	1	–	–	Unknown.
"	1	–	–	Candle.
Furniture Brokers	1	–	–	Unknown.
Glass Dealer	1	–	–	Smoking.
Goods in Transit	1	–	–	Light thrown from omnibus.
" "	1	–	–	Smoking.
Grocers	2	–	–	Candle.
" Green	1	–	–	Smoking.
" "	1	–	–	Flue, defect in.
" "	1	–	–	Fire, spark from.
Hair Dressers	1	–	–	" "
" "	1	–	–	Flue blocked up.
Hosier	1	–	–	Fire, spark from.
"	1	–	–	Candle.
"	1	–	–	Gas.
Hotel	1	–	–	Unknown.
Ironfounders	2	–	–	Hot ashes.
"	1	–	–	Spontaneous ignition.
Joiners	1	–	–	Hearth, defect in.
"	1	1	1	Unknown.
Leather Factor	1	–	–	"
Lodging House	2	–	–	Smoking.
" "	2	–	–	Candle
Manufacturers, Charcoal	1	–	–	Fire, spark from.
" Chemical	1	–	–	Friction.
" "	1	–	–	Boiler, overheat of.
" "	1	–	–	Spontaneous ignition.
" Cigar	–	1	–	Unknown.
" Cork	–	1	–	"
" Oakum	1	–	–	Candle.
" "	–	1	–	Unknown.
" "	1	–	–	Friction.
" Paint	1	–	–	Unknown.
" Rope	–	1	–	Tar-pot boiling over.
" Soap	–	1	–	Unknown.
Marine-store Dealer	1	–	–	Spontaneous ignition.
" "	1	–	–	Chimney, spark from.
" "	1	–	–	Flue, defect in.
Merchants, Cement	1	–	–	Unknown.
" Feather	1	–	–	Smoking.
" Lead	1	–	–	Hot ashes.
" Oil	1	–	–	Spontaneous ignition.
" Tea	1	–	–	Chimney.
" Timber	1	–	–	Spontaneous ignition.
" "	1	2	–	Unknown.
" "	1	–	–	Stove, overheat of
" Wine	1	–	–	Gas stove.
Miller, Flour	1	–	–	Unknown.
Milliners	–	1	–	"
Milk Dealers	1	–	–	Candle.
Music Hall	–	1	–	Unknown.
Nail and Bolt Makers	1	–	–	Hot ashes.
Offices	2	–	–	"
"	1	–	–	Matches.
"	2	–	–	Unknown.
"	1	–	–	Pitch-pot boiling ove
"	1	–	–	Gas stove.
"	1	–	–	" explosion of.
Outfitters	2	–	–	"
Packing Case Makers	1	–	–	Fire, spark from.
Painters	1	–	–	Matches.
Paper Hanger	1	–	–	Unknown.
Pawnbroker	1	–	–	Chimney, spark fro
"	1	–	–	Fire "
"	1	–	–	Unknown.
Picture-frame Makers	1	–	–	Gas.
Printers	2	–	–	Unknown.
Private	17	–	–	Flue, defect in.
"	1	–	–	Doubtful.
"	5	–	–	Gas.
"	17	–	–	Unknown.
"	1	–	–	Flue, blocked up.
"	1	–	–	" overheat of.
"	3	–	–	Lamp, paraffin.
"	28	–	–	Candle.
"	9	1	–	Fire, spark from.
"	1	–	–	" children playin with.
"	17	–	–	Matches.
"	1	–	–	Hearth, defect in.
"	3	–	–	Smoking.
"	1	–	–	Chimney, spark from
"	1	–	–	Lightning.
"	2	–	–	Airing linen.
"	4	–	–	Incendiary.
"	1	–	–	Fumigation.
"	1	–	–	Tar-pot boiling over.
Provender Dealers	1	–	–	Spontaneous ignition.
Provision "	1	–	–	Matches.
" "	1	–	–	" children playing with.
" "	1	–	–	Tar-pot boiling over.
" "	1	–	–	Unknown.
Publisher	1	–	–	Hot ashes.
Sack Dealer	1	–	–	Kiln, overheat of.
Schools	1	–	–	Hot ashes.
"	1	–	–	Hearth, defect in.
"	1	–	–	Unknown.
"	1	–	–	Chimney, spark from.
Ships, Sailing	5	–	–	Unknown.
" "	1	–	–	Pipe stove.
" "	1	–	–	Stove, overheat of.
" Steam	2	1	–	Unknown.
" "	1	–	–	Lamp oil.
" "	1	–	–	Boiler tubes, heat from.
" "	3	–	–	" overheat of.
Shipwrights	1	–	–	Fire, spark from.
"	2	1	–	Unknown.
Slaughter House	1	–	–	Stove, overheat of.
Smallware Dealer	1	–	–	Matches.
" "	1	–	–	Fire, spark from.
Smithy	1	–	–	" "
Stationers	–	1	–	Matches.
"	1	–	–	Lighted paper.
"	2	–	–	Gas.
Sugar Refiners	1	–	–	Cooper's fire.
Synagogue	1	–	–	Chimney.
Tailor's Workshop	1	–	–	Hearth, defect in.
" "	1	–	–	Hot ashes.
Tar Distillers	1	–	–	Unknown.
" "	1	–	–	Tar-pot boiling over.
Team Owner	1	1	–	Unknown.
" "	3	1	–	Candle.
Theatre	1	–	–	Unknown.
Tobacconist	1	–	–	Flue, defect in.
"	1	–	–	Gas, explosion of.
Undertakers	1	–	–	Fire, spark from.
Unoccupied	1	–	–	Lamp paraffin.
"	1	–	–	Fire, spark from.
"	3	–	–	Unknown.
"	1	–	–	Matches.
Victuallers, Licensed	1	–	–	Fire, heat from.
" "	3	–	–	Unknown.

Trade or Profession.	Slightly Damaged.	Considerably Damaged.	Totally Destroyed.	Supposed Cause of Fire.
Victuallers, Licensed	1	–	–	Light thrown down area.
„ „	1	–	–	Lighted paper.
„ „	1	–	–	Gas stove.
„ „	1	–	–	Gas.
„ „	2	–	–	Flue, defect in.
„ „	1	–	–	Candle.
Warehouses, Cotton	3	4	–	Unknown.
„ „	–	2	–	Doubtful.
„ „	1	–	–	Friction.
„ „	1	–	–	Incendiary.
„ „	1	–	–	Matches, children playing with.
„ „	1	–	–	Matches.
Warehouses, Cotton	1	–	–	Smoking.
„ Dock	1	1	–	Unknown.
„ General	2	–	–	„
„ „	1	–	–	Spontaneous ignition.
„	1	–	–	Pipe, stove.
„ Ship Chandlers	–	1	–	Unknown.
Wheelwrights	1	–	–	Boiler, overheat of.
„	1	–	–	Fire, spark from.
Workhouse	1	–	–	Steam pipe, overheat of.
Yard, Corporation	1	–	–	Pitch-pot boiling over.
Total Fires	333	32	2	

Supposed Cause of Fires.

Airing Linen	2	Flue, defect in	27
Boiler, overheat of	7	„ overheat of	1
„ tubes, heat from	1	Friction	3
Boiling ointment	1	Fumigation	1
„ solution	1	Gas	19
Candle	43	„ stove	3
Chimney	2	„ explosion of	2
„ spark from	8	Hearth, defect in	5
Cooper's fire	1	Hot ashes	12
Cotton from fire not extinguished	1	Incendiary	6
Donkey engine, spark from	2	Kiln, overheat of	6
Doubtful	4	Lamp oil	1
Fire, spark from	25	„ paraffin	4
„ heat from	1	Light thrown down area	2
„ children playing with	1	„ „ from omnibus	1
Fireworks	2	Lighted paper	6
Flue, blocked up	2	Lightning	2
Matches	26		
„ children playing with	4		
Oven, overheat of	2		
Pitch-pot boiling over	3		
Pipe-stove	2		
Smoking	14		
Spontaneous ignition	11		
Stove, overheat of	3		
Stove-pipe, overheat of	1		
Steam „	1		
Tar-pot boiling over	5		
Unknown	90		
False alarms	30		
Total Calls	397		

WORKING ACCOUNT from 1st January to 31st December 1875.

Dr.	£.	s.	d.
Salaries	681	13	4
Wages	972	12	1
Rents, Rates, &c.	371	1	11
Clothing	142	–	7
General Expenses	99	2	5
New Salvage Trap	25	19	3
Gratuities at Lancelot Hey Fire	70	–	–
Subscription to Chief Superintendent Ride on his retirement.	50	–	–
Stationery and printing	32	7	–
Sundries	29	6	4
Advertisements	26	6	2
Messrs. Bateson & Co., Solicitors	15	15	–
Surgeon	13	13	–
Gratuities to Detectives	10	–	–
Auditor	3	3	–
£.	2,613	–	1
Balance	1,240	9	2
£.	3,853	9	3

Cr.	£.	s.	d.
Balance from 1874	1,805	9	3
Services of Corps	2,029	7	5
Bank Interest	18	12	7
£.	3,853	9	3

BALANCE SHEET.

	£.	s.	d.
Balance of working account	1,240	9	2
Cheque issued but not drawn	60	–	–
£.	1,300	9	2

	£.	s.	d.
Arrears due by Offices	100	17	6
Cash in Bank	1,178	–	5
Do. Superintendent's hands	21	11	3
£.	1,300	9	2

The Balance Sheet does not include the value of the Working Materials, &c., belonging to the Committee.

Audited and found correct,

10 January 1876. *James Mann*, Auditor.

Appendix, No. 25.

COMMITTEE for the Year 1876.

J. M. Dove, Esq., Liverpool and London and Globe Insurance Company, Chairman.

H. D. Pickford, Esq., Sun Insurance Company, Deputy Chairman.

W. H. Andersson, Esq., Norwich Union Insurance Company.
J. A. Cunninghame, Esq., Lancashire Insurance Company.
W. Douglas, Esq., North British and Mercantile Insurance Company.
C. D. Fothergill, Esq., London and Lancashire Insurance Company.
C. Groves, Esq., Royal Exchange Insurance Company.
J. H. M'Laren, Esq., Royal Insurance Company.
J. B. Moffat, Esq., Northern Insurance Company.
W. Roberts, Esq., Alliance Insurance Company.
W. Walthew, Esq., Phœnix Insurance Company.
J. Moncrieff Wilson, Esq., Queen Insurance Company.

Mr. R. C. Yelland, Secretary and Superintendent, Hatton Garden.

SALVAGE CORPS STATIONS.

No. 1, Chief Station, Hatton Garden. | No. 2 Station, Athol-streel, North End.

Men are in attendance at the above stations day and night."

The following is the rule by which the Superintendent of the Salvage Corps is regulated at every fire which takes place:

Rule 15.—"Should you distinctly ascertain that the property in danger is not insured in any office connected with this Committee, you are in no way to interfere."

The following are the offices entitled to benefit by services of the Corps:

Alliance.
Atlas.
Caledonian.
Church of England.
Commercial Union.
County.
General.
Guardian.
Imperial.
Lancashire.
Liverpool and London and Globe.
London Corporation.
London and Lancashire.
Manchester.
North British and Mercantile.
Northern.
Norwich Equitable.
Norwich Union.
Phœnix.
Provincial.
Queen.
Royal.
Royal Exchange.
Scottish Commercial.
Scottish Fire.
Scottish Provincial.
Scottish Union.
Scottish Imperial.
Sun.
Union.
Westminster.
West of England.
Yorkshire.

FIRE STATIONS within the Borough.

Central Station, Hatton Garden.
Prince's Dock, North End.
Collingwood Dock.
Sandon Graving Dock.
Athol-street, Vauxhall-road.
Rose-hill.
Prescot-street, Low-hill.
Seel-street.
Brownlow-hill.
Olive-street, Windsor.
Essex-street, Park.
Brunswick Dock.
Salthouse Dock.
Everton Village.
Jordan-street.
Chisenhale-street
Battery-street.
Derby-road, Bootle.
Warren-street.

The Superintendent of the Fire Brigade resides at the Central Station in Hatton Garden; and six firemen and one waterman are continually on duty there. At each of the other fire stations there are three firemen on the beat who relieve each other alternately.

INDEX.

ANALYSIS OF INDEX.

LIST of the PRINCIPAL HEADINGS in the following INDEX, with the Pages at which they may be found.

PAGE

Accidents - - - - - - - - - - 701

Area (Jurisdiction of the Brigade) - - - - - 701

Brighton - - - - - - - - - - 707

CAPITAL (EXPENDITURE ON STATIONS, &c.):
1. *Powers of the Metropolitan Board in regard to Loans and Stock on Capital Account* - - - - - - - 707
2. *Amount of Expenditure hitherto incurred* 708

CENTRAL STATION:
1. *As to the present Chief Station of the Brigade in Watling-street and its Inadequacy* - - - - - - - 708
2. *As to the Steps taken in order to provide a New Station, and as to the Site and Cost* - - - - - - - 709
3. *As to the Staff required for the Central Station* - - - - - - - 709

CITY OF LONDON:
1. *Action of the City Authorities in laying down Hydrants* - - - - - 710
2. *Water Supply; Good Pressure available* 710
3. *Cost being incurred for Hydrants; limited Area to be covered* - - - - - 710

COST:
1. *Estimates of Captain Shaw at the Time of the Transfer of the Brigade to the Metropolitan Board* - - - - 711
2. *Sources whence the Cost is defrayed* - 711
3. *Annual Income and Expenditure; Excess of the latter* - - - - - - 712

Discontent - - - - - - - - - - 718

Distribution of Stations, &c. - - - - - - 718

Docks - - - - - - - - - - - 719

East London Waterworks Company - - - - 720

Efficiency of Brigade - - - - - - - 721

Engineers (Fire Brigade) - - - - - - 722

Engines - - - - - - - - - - 722

Farringdon-street Station - - - - - - 723

Fire Brigade Committee - - - - - - - 723

FIRE ESCAPES:
1. *Transfer of the Escapes to the Metropolitan Board* - - - - - - 724
2. *Cost* - - - - - - - - - 724
3. *Number of Escapes, and Increase from time to time as recommended by Captain Shaw* - - - - - - - - 724
4. *Central Station and Instruction Class* - 725

FIRE ESCAPES—continued. PAGE
5. *Hours of Duty of the Men; Opportunities for Rest* - - - - - - - 725
6. *Question of some Men going on Duty in the Day-time* - - - - - - 725
7. *Value of the Escapes as regards the Saving of Life, &c.* - - - - - - 725
8. *Suggested Transfer of the Escapes, with the Fire Brigade, to the Metropolitan Police* - - - - - - - - 725

Fire-plugs - - - - - - - - - - 725

FLOATING ENGINES (RIVER SERVICE):
1. *Services rendered by the Four Floats now stationed on the River; Want of an increased Number* - - - - - - 726
2. *Suggestions for the Provision of several small Floats; Delay in the Matter on the part of the Metropolitan Board* - 726
3. *Saving of Fuel by the Use of small Floats* 727
4. *Staff of Men, and Hours of Duty* - 727
5. *Repairs* - - - - - - - 727
6. *Arrangements for conveying Hose on Shore* 727

Gratuities and Pensions - - - - - - - 732

HOURS OF DUTY:
1. *Representations by Captain Shaw, and Complaints on the part of the Men as to the excessively long Hours of Duty, and the Want of Opportunities for Sleep and Rest* - - - - - - - - 737
2. *Hours of the Men attached to the Floating Engines* - - - - - - 738
3. *Continuous Duty on Sunday* - - - - 738
4. *Evidence in denial that the Men are overworked; Responsibility attached to Captain Shaw as to the excessively long Hours in individual Cases* - - - 738

HYDRANTS:
1. *Powers of the Metropolitan Board of Works as to the Provision of Hydrants* 739
2. *Explanations in detail on the part of the Metropolitan Board as to the Difficulties on the score of insufficient Pressure, and of partial Constant Supply, which have hitherto prevented the Application of an extensive System of Hydrants throughout the Metropolis* - - - 739
3. *Objections on the score of Expense; Estimates as to the very large Outlay involved* - - - - - - - 741
4. *Number of Hydrants required* - - 741
5. *Question of dispensing with Engines* - 741
6. *Relative Advantages of Hydrants and Fire-plugs for the Supply of Water to Engines* - - - - - - - - 742
7. *Different Kinds of Hydrants* - - 742

HYDRANTS—continued. PAGE

8. *Small Number hitherto provided by the Metropolitan Board* - - - - - 743
9. *Necessity of a complete Re-Arrangement of Pipeage and of General Regulations as to Pressure before laying down a System of Hydrants* - - - - - 743
10. *Evidence favourable to a large Extension of Hydrants throughout the Metropolis, with Suggestions as to Details* - - 743
11. *Suggestions in Report by Captain Shaw in* 1866 - - - - - - - - 743
12. *Objections on the part of the Water Companies in* 1866 - - - - - 743
13. *Documentary Evidence showing the Conclusions arrived at by the Metropolitan Board, and by the Works and General Purposes Committee* - - - - - 743

INSURANCE COMPANIES:

1. *As to the former Brigade maintained by the Companies, and its Transfer to the Metropolitan Board* - - - - - 744
2. *As to the Arrangement by which the Companies contribute to the Cost of the present Brigade* - - - - - - - - 745
3. *Question of increasing or reducing the Rate of Contribution* - - - - - 745
4. *Question whether the Insurance Offices should be called upon to make any Contribution* - - - - - - - 746
5. *Degree of Benefit to the Offices by the Operation of the Brigade* - - - 746
6. *Difficulty in supplying Returns showing Details as to Losses* - - - - - 747
7. *Question of the Companies being represented in the Management of the Brigade* - 747
8. *Degree of Attention paid by the Metropolitan Board to Representations by the Companies* - - - - - - - 748
9. *Large Cost of Fire Insurance as compared with the Cost of Protection against Fire* 748

Kent Waterworks Company - - - - - - 749

LIVERPOOL:

1. *Fire Brigade; its Connection with the Police* - - - - - - - 750
2. *Water Supply; Good Pressure obtained* - 750
3. *Use of Hydrants, &c., as well as of Engines* 751
4. *Salvage Corps; Contribution to the Cost of the Brigade* - - - - - - 751
5. *Number of Fires* - - - - - - 751
6. *Number of Stations and Distribution of Force* - - - - - - - 751
7. *Warehouses* - - - - - - - 751
8. *Want of Floating Engines* - - - - 751

Lodging the Men - - - - - - - - 752

MANCHESTER:

1. *Fire Brigade; Connection with the Police* 757
2. *Water Supply; successful Introduction of a Constant Service, and excellent Pressure with reference to Fires* - - - - 757
3. *Hydrants; their successful Operation* - 757
4. *Cost of the Brigade; Contribution by the Insurance Offices* - - - - - 758
5. *Recruiting for the Brigade* - - - 758
6. *Hours of Duty of the Men* - - - 758
7. *Superannuation* - - - - - - 758
8. *Fire Escapes* - - - - - - 758
9. *Hand Pumps* - - - - - - 758

Metropolitan Board of Works - - - - - 758

New River Company - - - - - - - 759

Owners of Property - - - - - - - 760

Parishes (Engines, Staff, &c.) - - - - - 760

PAY (WAGES OF FIREMEN, &c.): PAGE

1. *Particulars as to the Rates of Pay, and the Increase therein since the Transfer of the Brigade* - - - - - - 761
2. *Satisfaction, generally, of the Men on the score of Pay* - - - - - - 761

POLICE:

1. *Services now rendered by the Police in connection with Fires* - - - - - 762
2. *Suggestions on the Question of utilising the Force generally for the more prompt Suppression of Fires, as by keeping Manual Engines, Hose, &c., at the various Police Stations* - - - 762
3. *Views of Captain Shaw upon the Question of Police Co-operation; Comment thereon upon the part of the Fire Brigade Committee* - - - - - - - 763
4. *Suggestions for utilising the Fixed Points of the Police* - - - - - - 763
5. *Number and Distribution of Stations* - 764
6. *Question of Telegraphic Communication between the Police Stations and the Fire Brigade Stations* - - - - - 764
7. *Question of Training the Police for Fire Extinction Purposes* - - - - - 764
8. *Question of placing the Fire Brigade under charge of the Police* - - - 764
9. *Pay and Superannuation* - - - 765

Promotion - - - - - - - - - - 766

Rate - - - - - - - - - - - 767

Recruits - - - - - - - - - - 768

Resignations - - - - - - - - - - 769

Salvage Corps - - - - - - - - - 775

STATIONS:

1. *Importance attached to a Multiplication of Stations; Extent of Increase since* 1866 - - - - - - - - 787
2. *Suggested Establishment of Small or Substations* - - - - - - - - 788
3. *Closing or Removal of Stations since the Transfer of the Brigade to the Metropolitan Board; Complaints on the part of the Insurance Offices as to the Removal of Stations from the Centres of Insured Property* - - - - 788
4. *Expenditure on Stations and Repairs* - 789
5. *Accommodation for the Men* - - - 789
6. *Distribution of Fire Brigade Stations and of Police Stations* - - - - 789

STRENGTH OF THE BRIGADE:

1. *Present Strength; Increase since the Transfer to to the Metropolitan Board* 789
2. *Representations in detail by Captain Shaw as to the want of an increased Force; Reports to this effect from time to time* 790
3. *Explanations on the part of the Metropolitan Board and the Fire Brigade Committee; great Extravagance involved in the larger Scheme proposed by Captain Shaw* - - - - - - - 791
4. *Modified Increase suggested on the part of the Board* - - - - - - 792
5. *Increased Force proposed by Captain Harris* - - - - - - - 792
6. *Other Suggestions, generally, for increasing the Strength of the Brigade* - 792

SUPERANNUATION:

1. *Non-adoption, hitherto, of a Superannuation Scheme; Explanation on the part of the Metropolitan Board* - - - 793

Superannuation—continued. PAGE

2. *Memorials from the Men on the Subject* - 793
3. *Scheme prepared by Mr. Thompson, and submitted to the Men in February* 1875; *its Rejection* - - - - - - 793
4. *Scheme proposed by a Sub-committee of the Works and General Purposes Committee, but not approved by the latter* - 794
5. *Views of Captain Shaw and of the Men in regard to the Scheme prepared by Mr. Richardson, and recently adopted by the Board; amended Conditions advocated by the Men* - - - - - - 794
6. *Explanations in detail on the part of the Board in support of the foregoing Scheme; Comment upon its Rejection by the Men* - - - - - - - 795
7. *Suspension of further action in the Matter pending the present Inquiry* - - 796
8. *Effect of a Superannuation Scheme upon the Question of Resignations* - - 796
9. *Approval of a Scheme upon the basis of that in force in the Police* - - - 797
10. *Analogy in the case of the Salvage Corps* 797
11. *Question of a Right to Superannuation, irrespective of Misconduct* - - - 797
12. *Number of Pensions hitherto granted* - 797
13. *Suggestions in Report by the Accountant of the Metropolitan Board* - - - 797
14. *Documentary Evidence in illustration of the working of different Schemes* - - 797

Turncocks (Water Supply) - - - - - - 805

Uninsured Property - - - - - - - 805

Water Supply:

1. *Provisions in the Acts of* 1852 *and* 1871, *upon the Subject of a Constant Supply, and Powers of the Metropolitan Board in the Matter* - - - - - - 807
2. *Extent of Districts under Constant Supply* 807

Water Supply—continued. PAGE

3. *Testimony to the Advantages of the Constant System, as compared with the Intermittent System; Facility in applying the former* - - - - - - 807
4. *Great Waste of Water under the Intermittent System; Economy feasible under Constant Supply* - - - - - - 807
5. *Explanations on the part of the Metropolitan Board as to the Non-enforcement of a Constant Supply throughout London* - - - - - - - - 807
6. *Immense Outlay required for New Fittings under a Constant Supply* - - 808
7. *Report by Captain Shaw in* 1866 *in favour of a Constant Supply at High Pressure; Objections on the part of the several Water Companies* - - - - - 808
8. *Question of Pressure in reference to Fires; Difficulties on this Score, even if a Constant Supply were in Operation* - - 808
9. *Small Pipes and Low Pressure in Wapping and Rotherhithe* - - - - - - 809
10. *Question of separate Mains for Fire Extinction Purposes* - - - - 809
11. *Question of a Re-arrangement of Pipeage, &c., of a connection between the Mains of the different Companies* - - - 809
12. *Requirements of Captain Shaw as to the Volume of Supply at Fires* - - - 810
13. *Exceptional Instances of Short Supply under the present System* - - - 810
14. *Testimony to the zealous Co-operation of the Water Companies in the work of Fire Extinction* - - - - - 811
15. *Advocacy of a Concentration of the Supply under the Metropolitan Board of Works; proposed Purchase of the Property of the Companies* - - - 811
16. *Other Details generally* - - - - 811

I N D E X

[*N.B.*—In this Index the Figures following the Names of the Witnesses refer to the Questions in the Evidence; and those following *App.* to the Pages in the Appendix.]

A.

ACCIDENTS. Concurrence of the men of the brigade in the superannuation scheme of the Metropolitan Board of Works so far as it relates to men disabled by injury received on duty, *Captain Shaw* 859-862.

Statement as regards a return (*App.* 629) showing the cases of men who have broken down in the service of the brigade, that such return was prepared by witness in strict accordance, as he conceives, with the terms of the order of the present Committee, *De la Hooke* 3617-3633.

Expediency of each case of accident in the brigade being dealt with on its own merits at the discretion of the Board, *Freeman* 4309–4311——Opinion that casualties are more numerous in the police than in the brigade, *Richardson* 5004.

Return showing the cases of men who have broken down in the service of the brigade, with the amounts awarded to them by the Metropolitan Board of Works, *App.* 629.

See also *Gratuities and Pensions.*

Accounts. Probablity of much time being occupied by the firemen in accounting, there being one man at each station entrusted with this duty, *De la Hooke* 3378–3382.

Act 28 *&* 29 *Vict. c.* 90. Establishment of the brigade under the Act 28 & 29 Vict. c. 90, the duties being vested in the Metropolitan Board of Works, *Lushington* 3. 5.

Age of Appointment (*Recruits*). Necessity of raising the age in order to get recruits for the brigade, men being sometimes taken at thirty years of age and upwards, *Captain Shaw* 935–937——Effect of a satisfactory superannuation scheme to produce once more a large list of applicants of the required age, *ib.* 938–940——Maximum limit of thirty years of age now in force, *ib.* 1341——Advantage if recruits could be got at from seventeen to twenty-five years of age, though witness is now taking them at thirty, *ib.* 1400, 1401.

Average of about twenty-three years of age at which men enter, *Richardson* 4959.

Age of Retirement. See *Superannuation.*

Area (*Jurisdiction of the Brigade*). Jurisdiction as regards the brigade over the metropolitan area, this being much smaller than the metropolitan police district, *Lushington* 6——Special powers under which services may be rendered by the brigade outside the metropolitan area, payment being made for such services, *ib.* 7–9.

Adoption of the same area by the Metropolis Water Act of 1871 as by the Act of 1852 whilst certain duties were laid upon the Corporation and the Metropolitan Board as the local authorities, *Lushington* 51-53——Option in the Metropolitan Board as to the brigade rendering assistance outside the metropolitan area; practice as to charging for such assistance, *ib.* 83. 86.

Very small area served by the former brigade as compared with the area under charge of the Board, *Captain Shaw* 108, 109. 330–333——The duties of the brigade now extend over 121 square miles, *ib.* 108——Statement of the area, number of houses, and population in the several districts, A, B, C, and D; average of about seventy-six persons in every ten houses, *ib.* 505–507.

Way in which the operations of the brigade might be extended to the metropolitan police area without necessitating any increase of stations; that is, by utilising the police stations, *Harris* 7878–7880. 8008–8012——Difference between the area under the Metropolitan Board and the Metropolitan police area, *ib.* 8056.

Arrival at Fires. Few instance of complaint in regard to the arrival of engines from the present stations, *Hamlyn* 1893–1896.——*See* also *Engines. Stations.*

Report, 1876—*continued.*

Arson. See *Fraudulent Fires.*

Asphalte Pavements. Large increase of expense for renewal when a water pipe bursts in a street which is asphalted instead of paved with granite, *G. Shaw* 6294-6299.

Attwood, Charles. Gratuity of four guineas in the case of Charles Attwood, discharged on account of paralysis; doubt how this was caused, *De la Hooke* 3767-3773.

B.

Badge of Merit. Statement as to witness having never recommended gratuities to men for specially efficient service, but having preferred a badge of merit, *Captain Shaw* 1172, 1173. 1358, 1359. 1689-1693.

Suggestion by Captain Shaw that a badge of merit should be given in lieu of a pecuniary reward for saving life; explanation as to this proposal not having been carried out, through the death of a gentleman who had undertaken to design a badge or medal, *De la Hooke* 2988-2991. 2995-3002. 3243, 3244.

Explanation with further reference to the circumstances under which directions were given (to Mr. Cresy) for the preparation of a medal or badge of merit; recommendations hereon by Captain Shaw in report in 1868, *De la Hooke* 3556-3575.

Report by Captain Shaw, under date 5th November 1868, as to the unsatisfactory working of the arrangement concerning rewards given to the men who have saved life from fire; recommended establishment of a badge of merit, *App.* 615.

Banstead Asylum. Large pipes laid down at the new asylum at Banstead, by witness' advice, in order to efficiently work the hydrants, *Bramwell* 5953.

Battersea Station (*Fire Brigade*). Suggestions by Captain Shaw, under date 20th November 1873, as to the staff and plant necessary for the new Battersea station, *App.* 625.

Bazalgette, Sir Joseph William. (Analysis of his Evidence.)—Summary of the result of numerous observations taken by witness, on the part of the Metropolitan Board, in order to ascertain the pressure on the water mains in different parts of the metropolis, 5577, 5578——Average of thirty pounds of pressure, each pound of pressure representing a head of 2·3 feet, 5578-5581. 5785——Statement of the varying pressures in the districts of the several companies, 5582.

Explanation that the pressure is affected by the quantity of water being drawn from the pipes at the time, by the distance from the reservoir, and by the size of the pipes, 5583-5591. 5678-5684——Grounds for the conclusion that the pressure in the mains or pipes generally is altogether inadequate for the working of hydrants and hose without the aid of engines, 5592 *et seq.*

Varying pressure from twenty pounds to forty-eight pounds in that part of the Kent Water Company's district where there is constant supply, 5593——Average of less than twenty pounds pressure in the East London Company's district; entire insufficiency of the pressure in the constant supply portions of the district to meet the requirements of Captain Shaw, by means of hydrants, 5593-5604.

Unreliable pressure for throwing a jet of water to a good height by means of hydrants and hose, witness further submitting that engines cannot be safely dispensed with, 5602-5612. 5622 *et seq.*—— Result of some experiments at Manchester in order to ascertain the height to which jets may be thrown under difficult conditions as to pressure and size of hose, 5613. 5615-5621——Particulars as to the result also of some recent experiments at Grays, 5613, 5614. 5622-5626——Illustrations of the effect of distance in diminishing and exhausting the pressure in the case of pipes of different sizes, 5626-5630.

Evidence showing that with the present pressure and the small pipes in certain water-side districts, as in Wapping and Rotherhithe, a sufficient supply of water could not be obtained so as to enable the engines to cope with large fires, 5631-5642——Opinion that on the whole hydrants cannot be usefully applied in aid of engines with the present pressure, 5643-5645——Exceptional pressure in parts of the Kent Company's district so that in such case hydrants may be found effectual to cope with fires, 5646-5649.

Dissent from certain evidence of Mr. Quick in 1871 as to the expediency of hydrants whenever the mains are constantly charged, 5650-5652——Advantage of hydrants rather than plugs as a means of preventing waste of water at fires, 5653, 5654——Conclusion however that plugs are as serviceable as hydrants for the supply of engines at fires, and that plugs now exist upon constantly charged mains without being forced out by the pressure, 5654-5662. 5665-5673. 5692-5694.

Circumstance of two-thirds of the streets of London being without mains; difficulty on this score as to the water supply at fires, 5662-5664—— Insufficiency of a constant supply to admit of turncocks being dispensed with, unless there be also high pressure; belief

Report, 1876—*continued.*

Bazalgette, Sir Joseph William. (Analysis of his Evidence)—*continued.*

belief as to the impracticability of securing such pressure under the present conditions in London, 5666–5684——Increased facilities to be secured by placing the water supply under the same management as the fire brigade, 5674–5676.

Want of a pressure of from fifty to fifty-five pounds at every hydrant in case of fire; inexpediency otherwise of entirely dispensing with engines, 5677–5684. 5688–5691——Satisfactory pressure at Manchester for the efficient working of hydrants, 5685–5687——Examination as to the cost of laying down different kinds of hydrants throughout the metropolis; estimate of from three quarters of a million to a million for a full and satisfactory supply, 5695–5735.

Cost of 18 *l.* 13 *s.* for Captain Shaw's hydrant, 5696, 5697——Disapproval of the the ball hydrant (as used at Manchester) by Mr. Taylor, engineer of the Lambeth Company, and by Mr. Rawlinson, 5698. 5713. 5718. 5720. 5796, 5797——Small area to be covered by hydrants in the city, 5702–5705——Conclusion as to the immense expense of hydrants throughout London, based upon the experience of Manchester and the cost there in proportion to the population, 5708–5718——Assumption that a better and more expensive kind of hydrant would be used in London than has been adopted in Manchester; outlay of not more than half a million if the cost per hydrant is only 5*l.*, 5713–5725.

Opinion that any utility in hydrants would not be justified by the expense, save in exceptional places, 5726. 5778——Considerable cost for stand-pipes if provided according to Captain Shaw's requirements, 5730, 5731——Different prices of hydrants laid down in Northumberland Avenue, 5732, 5733——Doubt as to a sufficiently good hydrant being put down for 5 *l.*, 5734, 5735.

Evidence in further support of the conclusion that even with constantly charged mains hydrants possess no advantages over plugs for fire brigade purposes, though better for the water companies, as preventing waste, 5736–5755. 5772, 5773.——Importance however of hydrants in districts where there is a sufficiently good pressure, 5753. 5772.

Statement in further explanation of the low pressure and deficient supply in Wapping in the East London Company's district, 5756–5760. 5768–5771. 5786–5792——Instances of lower pressure at night than in the daytime, 5761–5767——Very good pressure in the Plumstead district, 5765, 5766——Doubt as to the hydrants at Manchester having been found defective in working, 5774, 5775.

Entire insufficiency of a three-inch pipe for the supply of water at a fire, 5776, 5777——Single system of supply in Manchester, the mains being all large, 5779, 5780——Low pressure generally in London, so that with a hose 200 feet long the water would hardly rise above the surface, 5781, 5782——Facility in using plugs in London, but not if there were high pressure, 5793–5795——Very high pressure to be attained before hose will burst, 5798–5801.

Further explanation that from a water company's point of view hydrants are in all cases preferable to plugs, 5802–5805——Exception taken to a statement by Captain Shaw in favour of a constant supply by gravitation at a height of 300 feet above high water mark, 5806, 5807——Concurrence of Captain Shaw and witness in a report to the Metropolitan Board strongly adverse to the use of hydrants unless a sufficient pressure of water is insured, 5807–5812——Absence of any such pressure in London as will throw water to a height of 200 feet as desired by Captain Shaw, 5813.

Berrey, T. H. G. (Analysis of his Evidence.)—Experience of witness for twenty-six years as engineer and superintendent of the Manchester Corporation Waterworks; change from intermittent to constant supply under his supervision, 7360–7362. 7405——Great facility in substituting the constant for the intermittent system, the change having been made by sections at a time, 7362–7364——Enormous advantages of a constant supply in reference to fires, 7365. 7373——Great saving of water at Manchester through the adoption of a constant supply; reduction of from thirty-eight to twenty gallons per head in the daily consumption, 7366, 7367.

Small expense in the alteration or repair of house fittings for the purposes of a constant supply; average change of from 10 *s.* to 11 *s.* per house, 7368. 7371, 7372. 7462, 7463——Careful inspection after the application of the constant system, any waste having been at once remedied, 7368——Consultation of witness by all the large towns in the kingdom upon the question of introduction of the constant supply, 7369. 7370.

Entire efficiency of the hydrants at Manchester, the Bateman and Moore hydrant working very smoothly and satisfactorily, 7374–7378——Satisfactory working also of the Hawksley hydrant as used in Salford, 7376——Average cost of 30 *s.* for each hydrant laid down upon a new main, the cost being 45 *s.* when laid upon a main already underground, 7379–7381——Conclusion that with proper management hydrants may be laid down as cheaply in London as in Manchester; very excessive cost in the city of London if the charge is as much as 20 *l.* per hydrant, 7382–7385. 7438–7441.

Excellent pressure at Manchester, the supply being by gravitation; elevation of the

Report, 1876—*continued.*

Berrey, T. H. G. (Analysis of his Evidence)—*continued.*

several reservoirs, 7386. 7394-7399. 7427——Necessity of engines as well as hydrants in London, the pressure not being universally sufficient for the latter, 7387, 7388. 7433-7437——Important advantage of hydrants over plugs, the former giving a better supply for engines at an increased pressure, 7388-7393——Very few fires at Manchester at which engines are used, the hydrants being everywhere available instantaneously, so that serious fires rarely occur, 7399-7405.

Opinion that a system of hydrants and a constant supply may by proper management be applied in London as well as in Manchester. 7406-7416——Difficulties in London owing to there being eight different water companies supplying at different pressures, 7408——Great economy of water and of working, if the companies would agree to sell their undertakings to the municipal authority, so that they might be under one management, 7408-7410. 7421, 7422.

Conviction of witness that a large waste of water under the intermittent system in London might be saved by applying the constant system, accompanied with an efficient inspection of fittings, 7410. 7415. 7420——Conclusion as to the sufficiency of the present service pipes and house fittings in London for the continuous pressure under a constant supply, 7411-7414. 7444-7446——Facility of a gradual adoption of the constant system in London, 7415, 7416——Belief as to the entire efficiency of the London fire brigade, the main thing wanted being a constant supply of water and a system of hydrants, 7417, 7418.

Total cost of 2,500,000 *l.* represented by the Manchester Waterworks, including the works purchased from the late water company, 7424. 7459-7461——Particulars as to the charge for water for domestic and trade purposes respectively, 7425, 7426. 7442——Comment upon the increase of insurance rates, whilst fires are so promptly suppressed; reference hereon to the contribution by the companies towards the expense of the brigade, 7428-7432.

Objections to policemen acting as firemen; distinction observed in this respect at Manchester, 7443——Exceptional instances of deficient supply of water, 7448, 7449——Facilities in dealing with the pressure, through there being several zones of supply, 7453-7455——Arrangement now in force for detecting waste from the ball-tap under the constant supply, 7457, 7458.

Blackheath and Lewisham Stations. Result of an inquiry by witness that at Blackheath and Lewisham stations there are very few calls to fires, and that nevertheless the men have had comparatively little leave, *Richardson* 4641-4645. 4811-4813.

Bonded Warehouses. Large concentration of valuable goods in bonded warehouses, from the insurance of which goods the companies derive considerable receipts, whilst they contribute but little to their protection from fire, *Thompson* 5226. 5230, 5231. 5237-5244. 5342, 5343.

Boston (*United States*). Force of 460 firemen in Boston, the annual expenditure being returned as 104,000 *l.*, *Captain Shaw* 1753.

Bow Station (*Fire Brigade*). Staff of firemen attached to the Bow station, of whom only two are available at night to go out with the engine, *Captain Shaw* 662-668.

Bradford. Withdrawal of a clause in a Bradford local Bill which proposed to tax the insurance companies for fire extinction, *Tomkinson* 6734.

Bramwell, Frederick Joseph. (Analysis of his Evidence.)—Occasional consultation of witness, who is a civil engineer, by the Metropolitan Board of Works, 5819——Experiments made by witness on the subject of the pressure given by the different water companies in their mains in the metropolis, 5820-5822——Statement as to the East London Company not being bound to give a higher pressure than forty feet above the level of the pavement, and as to this pressure being reduced when there is a draught upon the main, 5822. 5826——Uselessness in putting hydrants upon mains in which there is no greater pressure than forty feet: grounds for this conclusion, 5822-5828.

Thinner pipes proposed to be used by the East London Company on account of the smaller pressure than in the case of the other companies, 5823, 5824——Evidence to the effect that whether mains are devoted to constant supply or to intermittent supply, it would be equally a waste of money to apply hydrants with such a pressure as forty feet, 5823-5828——Fallacy in supposing that constant pressure means high pressure, 5823——Important deduction to be made on the score of friction in the pipes, and on other grounds, in calculating the pressure for the application of hydrants; result of experiments on the subject, *ib.*

Very little advantage from the use of hydrants unless they can be used to throw water to a proper height upon fires, 5823. 5826——Slight advantage of hydrants over fire-plugs on the score of facilitating the supply of water to the fire engines, 5823. 5826-5828——Interference with the efficiency of the engine if water be used in waste by the hydrant, the pressure being insufficient, 5824-5826——Very heavy expenditure in providing

Report, 1876—*continued.*

Bramwell, Frederick Joseph. (Analysis of his Evidence)—*continued.*

viding hydrants with standposts, 5826——Belief as to the satisfactory use of fire-plugs with constantly charged mains, 5828.

[Second Examination.] Statement showing that in Liverpool fire-plugs are largely used upon mains under constant supply, 5830–5833——Stipulation in the case of the East London Company as to cisterns being obligatory, and as to high service being paid for where the water is delivered at more then twenty feet above the pavement, 5833——Conditions as to constant supply in the case of the New River Company, as to high service being charged for, and as to the provision of cisterns; stipulation for a pressure of seventy feet above the pavement, *ib.*

Particulars relative to the conditions in the Acts of the London Water Companies generally (other than the East London and New River Companies), as to the level at which they are to supply; conclusion that there is no stipulated pressure above the pavement, 5833-5843. 5854——Great variation in the height from zero upwards, at which the companies may supply, 5833-5835. 5841-5843——Facility of ascertaining the areas under different levels of supply, 5843, 5844. 5849-5851——Possibility, doubtless, of placing hydrants over a considerable area supplied at a good pressure, 5845.

Necessity of applying to the engineers of the different companies for any information that may be required as to the actual amount of pressure given, 5846–5848——Probability of the companies' pressure not being much in excess of their statutory obligation over their whole districts, though to some extent they raise water to a higher level than is compulsory, in order to meet their customers' wants, 5852–5854——Explanation that whatever the pressures which the companies are bound to give, such pressures are for domestic supply, and not for fire service, 5854.

Calculation that a supply of 2,000 gallons a minute, as stated by Captain Shaw to be required in certain cases for fires, is equal to 1-42nd of the whole supply of the eight companies in the month of May last, 5854–5863——Immense increase of pressure required over and above the relative increase in the quantity delivered per minute, 5864, 5865——Illustration of the enormous influence of the friction through pipes, in diminishing the statutory pressure, *ib.*

Data for the calculation that at least 100,000 dydrants would be required for all London, 5866-5868——Provision of thirty-six hydrants by the Temple authorities, over an area of about ten acres, 5866——Calculation that in the city the branch services for the hydrants, together with the hydrants, cost about 20 *l.* in each case, 5868-5870——Smaller cost in Liverpool and Manchester than in the city of London, witness concluding, however, that the metropolis cannot be adequately supplied with hydrants for less than a million sterling, 5871–5875——Doubt as to the water companies being satisfied with the cheaper class of hydrants, 5874, 5875.

Considerable expense incurred for a new main in connection with the hydrants in the Temple, 5875, 5876——Satisfactory result of experiments in order to test the efficiency of the Temple hydrants, 5877-5880. 5886, 5887——Small services required of private hydrants in warehouses as compared with public hydrants in the streets, 5881, 5882——Usefulness of hydrants in the low-lying districts of the New River Company, 5883. 5888, 5889—— Advantage of the company laying arterial mains in the city, so as to give an adequate pressure upon the pipes, 5890.

Reference to a statement by Captain Shaw as to the firemen never trusting to the pressure in the pipes to do the required work in the earlier stages of fires, 5890–5893——Views of Captain Shaw in favour of a constant supply at a height of not less than 300 feet above high-water mark, such supply to be by gravitation alone, 5893——Excess beyond 10 *l.* for each hydrant proposed by Captain Shaw in 1866; 5894, 5895——Want of ten or twelve hydrants for playing upon each large fire; that is, if ten or twelve engines are now required, 5896.

Conclusion that it is entirely useless to establish any system of hydrants in London until all the water companies are under some general regulations as regards pressure, 5896. 5899. 5906–5908——Necessity also of the pipeage being re-arranged between the engineers of the companies and the engineer of the Metropolitan Board; there must, in fact, be a settled plan of re-pipeage, 5896, 5897. 5908——Heavy cost involved in a re-arrangement of the pipeage, with reference to fires, whilst the water companies should hardly be asked to bear any portion of the charge, their duty being to supply water for domestic purposes, 5896.

Advantage of a separate system of pipes for the purposes of fires, or else of a general revision of the pipeage, 5898. 5912-5915. 5927——Extra height to which the water must be pumped in order to obtain an adequate pressure; increased expense thereby to the water companies, if they are to be called upon to bear it, 5898——Necessary employment of turncocks under a constant supply, in order to get sufficient head of water to bring to bear upon a fire, 5899-5902——Value of steam fire engines, so long as the water will flow in any adequate quantity from the pipes, 5904, 5905.

Special importance of due consideration of the enormous loss of pressure consequent

Bramwell, Frederick Joseph. (Analysis of his Evidence)—*continued.*

upon the delivery of a large quantity of water upon a particular spot, 5907——Importance, also, of the question of the size of the pipes, in connection with the use of hydrants, 5907. 5913-5915——Advantage of pipeage arrangements, whereby the whole supply of the different companies could be brought to bear upon the same fire, 5909——Reasons for the provision of hydrants in the city which do not apply to the rest of the metropolis, 5910, 5911.

Further evidence as to the necessity for turncocks under a constant supply, as well as under an intermittent supply, even with the use of hydrants; that is, so long as there are small pipes and low pressure, 5918–5926. 5941-5945——Conclusive character of the experiments before alluded to, in proof of the great decrease of pressure through the friction in the pipes, 5928–5930——Belief as to the companies giving more than the statutory pressure in some districts, in order to supply customers at a higher level, for the sake of profit, 5931-5933. 5964–5968.

Computation that with 100,000 hydrants in London they would be from eighty to 100 feet apart; comparison hereon with Manchester, 5934–5937. 5946–5948——Impracticability, save by means of legislation, of a combination between all the companies, with a view to a concentration of supply in case of fires, 5938–5940——Several matters by which the pressure is regulated, as well as by the elevation of the ground, so that the carrying out of a system of hydrants must be carefully considered in detail, 5949–5951.

Large pipes laid down at the new asylum at Banstead, by witness' advice, in order to efficiently work the hydrants, 5953——Further explanation in connection with the large pipe laid down in the Temple in connection with the hydrant system, 5955, 5956——Complaint as to the companies not giving a constant supply for domestic purposes, but not as to the character of their supply for purposes of fires, 5957. 5969–5973.

Efficiency on the whole of the system of steam fire engines, the instances being rare of deficiency of water supply for working them, 5958–5963——Comment upon a former proposal by the companies, that if there were a constant supply there should be an overflow pipe in each house, 5971, 5972——Immense outlay involved in an alteration of the fittings all over London, so as to adapt them to a constant supply, 5974–5980.

Particulars relative to the mode of introduction of the constant supply into Liverpool, and the advantages of the waste water meter there used; economy of supply owing to this check, 5980–5986——Cost of about 1,700 *l.* incurred in placing new mains in the Temple and in fitting the internal hydrants, 5987-5992——Satisfactory height to which water was thrown by the Temple hydrants, 5993–5996.

Opinion that with adequate pipeage, with high pressure, and with constant supply hydrants are preferable to steam fire engines, but that a few engines should in such case still be maintained, 5997–6001——Several respects in which an entire reliance upon hydrants would involve exceedingly heavy expenditure, it being questionable whether the cost would not be out of proportion to the advantage to be gained, 6002–6009.

Bridges, Mr. Illustration in the case of Mr. Bridges, a superintendent in the brigade, of the great gain to him under the superannuation scheme in return for the proposed transfer of the amount paid by him to the savings fund; comment upon the rejection of the scheme by Bridges, as the result of an entire misconception, *Richardson* 4499–4501. 4533.

BRIGHTON:

Constant supply of water at Brighton by means of reservoirs at four zones varying in height from 150 feet to 430 feet above the sea, *Easton* 6023, 6024——Use of the screw-down hydrant at Brighton, fire engines being entirely dispensed with, *ib.* 6024, 6025——Valuable assistance rendered by the police at fires, there being also a fire brigade under the police; prompt action taken by the former at the outbreak of any fire, hose reels and fire escapes being kept at the chief police stations, *ib.* 6025, 6026. 6056-6064. 6094–6111. 6120–6130. 6135-6144.

Importance of the facility of uniting the several zones of water supply at Brighton, *Easton* 6026—— Varying size of the mains, from ten to eighteen inches, *ib.* 6028. 6029——Special arrangements by means of a new set of pipes whereby there is an intermittent as well as a constant service for domestic purposes, whilst constant high pressure is everywhere in force in reference to fires; limited cost of the intermittent pipes, *ib.* 6030–6048.

Practical training of the Brighton police in fire-extinction duties, *Easton* 6057. 6092–6098. 6138-6142——Facility in the conveyance and use of leather hose by means of the reels to which it is attached; relative advantage of flaxen hose, *ib.* 6065–6070——Particulars relative to the cost per hydrant, the average being 5 *l.* exclusive of the standpost, *ib.* 6074-6118.

Few fires in Brighton, whilst there is no experience of very large fires, as in London; adequate

Report, 1876—*continued.*

BRIGHTON—continued.

adequate means, however, for coping with large fires, *Easton* 6099–6107. 6131, 6132——Instances of six hoses playing upon a fire, *ib.* 6112——Average pressure of about 220 feet, *ib.* 6113.

Different municipal jurisdiction in Brighton and in Hove and West Brunswick, all the districts being under the Brighton Corporation for the purposes of constant supply, *Easton* 6133, 6134. 6145–6147——Facility in putting up fittings, either for the intermittent or the constant supply at Brighton, without multiplication of expense, *ib.* 6148, 6149——Average of about fifty feet as the height to which jets are thrown, though they may be thrown up to seventy or eighty feet, *ib.* 6153——Power of enforcing the regulations in reference to constant supply, *ib.* 6154, 6155.

British Museum. Private arrangement for the protection of the British Museum from fire, *Captain Shaw* 1726–1728.

Brooks' Wharf. Information relative to the fire at Brooks' Wharf, and the necessity for engines, even if there had been a plentiful supply of hydrants, *Thompson* 5159. 5220–5225——Large number of engines and of men at the fire at Brooks' Wharf, without other districts having been left quite unguarded, *ib.* 5327–5330.

Building Acts. Several Building Acts adverted to in connection with the present inquiry; reference especially to a Bill for consolidating the different Acts, and containing provisions as to the storage of dangerous substances, &c., *Lushington* 72, 73.

Bull, George. (Analysis of his Evidence.)—Is a second-class engineer in the brigade, and is in charge of Whitecross-street station, 2384–2389——Total of nine men at the station, there being one steam-engine and one manual, 2387. 2390——Practice of witness to take, if possible, five men with him to a fire, leaving only one in the station, 2391–2393. 2407——Entire concurrence in the evidence of Captain Shaw and Mr. Hamlyn on the score of superannuation, and its importance in order to induce men to remain in the brigade, 2394–2399.

Continuous work of witness' men for about fourteen hours daily, whilst they are liable to be called for duty during the remaining ten hours, 2400–2402——Absence of any regular leave on Sunday or during the week; expediency of the men having some time at their own disposal, 2402–2406. 2445–2447——Want generally of an increased staff at fires, so as to be more independent of outside assistance, 2407–2412.

Explanation that in addition to witness' pay of 2 *l.* 2 *s.* a week his lodgings coals and gas are worth about 15 *s.*, but that as being in charge of an important station he should in fairness receive the same pay as a first-class engineer, 2413–2434——Total of twenty-three or twenty-four stations in charge of second-class engineers, 2424–2426. 2449–2452——Particulars as to the course of promotion to the rank of second-class engineer and first-class engineer respectively; promotion of witness after about seven years' service, 2424–2441.

Bunhill-row Fire. Illustration of the great value of hydrants in the case of the fire in Bunhill-row, *G. Shaw* 6127–6199.

C.

Cabmen's Shelters. Advantage of a fire station at every shelter provided for cabmen, *Tozer* 6796–6799.

Calls to Fires. Explanation of the course of proceeding on information reaching any station that a fire has occurred; means of ascertaining the amount of force to be dispatched, *Captain Shaw* 114–121——Reward of 1 *s.* given for each call to a fire, *ib.* 139, 140——Voluntary calls on the part of the public; together with calls by the police, by means of which information is conveyed to the fire escape stations and the engine stations, *ib.* 145–153. 162——Necessity of relying on the police and the general public for conveyance of information to the brigade stations when a fire occurs, *ib.* 1138.

See also *Police Telegraphic Communication.*

Camberwell Station (*Fire Brigade*). Staff of four men and an officer attached to this station, there being two manual engines, *Morris* 2600–2603——Necessity at times of taking all the available men away and of closing the station, *ib.* 2604–2609. 2649–2669.

CAPITAL EXPENDITURE ON STATIONS, &c:

1. *Powers of the Metropolitan Board in regard to Loans and Stock on Capital Account.*
2. *Amount of Expenditure hitherto incurred.*

1. *Powers of the Metropolitan Board in regard to Loans and Stock on Capital Account:*

Authority of the Metropolitan Board, with the consent of the Treasury, to create Consolidated Stock for the provision of permanent plant, &c., *Lushington* 9–11——Further

Report, 1876—*continued.*

Capital Expenditure on Stations, &c.—continued.

1. *Powers of the Metropolitan Board in regard to Loans and Stock, &c.*—continued.

statement as to the power of the Board, with the consent of the Treasury, in regard to the creation of Consolidated Stock for the provision of station houses, fire engines, &c., *Lushington* 84, 85. 88, 89. 92–98.

Power of the Board under the Act of 1865 (with the consent of the Treasury) to borrow up to 40,000 *l.*; conclusion as to this having been intended for capital expenditure, *Lushington* 437–439. 465——Absence of any further borrowing powers till the Metropolitan Loans Act of 1869, *ib.* 440, 441.

Effect of the Loans Act of 1869 in creating a complete change in the financial operations of the Board; special conditions as regards the exercise of borrowing powers for the purposes of the fire brigade, *Lushington* 442–444——Limit of 10,000,000 *l.* at which the borrowing powers of the Board were placed by the Act of 1869; explanation as to this amount having been based on an estimate which included 50,000 *l.* for the fire brigade, in addition to the 40,000 *l.* previously authorised, *ib.* 445–449. 465, 466——Large margin of borrowing power under the Act of 1869 which might legally have been applied to fire brigade purposes; necessary sanction, however, of the Treasury before any loans could have been raised for the brigade, *ib.* 451, 452. 457–460. 465–491.

Main bject of the Loans Act of 1875 to require an annual Parliamentary budget in reference to loans for fire brigade and other purposes; authority under the Act to borrow an additional sum of 15,000 *l.* for plant, &c., up to 31st December 1876, *Lushington* 452–457. 461–466. 482.

Explanation as to the Board not having had power to expend upon staff any of the capital sums devoted to new stations; saving of rent by the latter expenditure, *De la Hooke* 3526–3530——Total of 40,000*l.* as the authorised capital in respect of the Fire Brigade at the time of its transfer to the Board; further powers, to the extent of 75,000 *l.*, under the Act of 1869, *Freeman* 3867–3869. 3872–3875; *Gunn* 5446. 5523–5536.

2. *Amount of Expenditure hitherto incurred:*

Capital expenditure of 75,000*l.* under the Act of 1869, the total expenditure up to the Loans Act of 1875 having been 115,000 *l.*, *Lushington* 450; *Freeman* 3867–3869. 3872–3875; *Gunn* 5526–5536.

Explanation that no part of the interest on the capital expenditure is paid out of the rate, *Freeman* 3877——Expenditure of the capital in providing new stations and engines, &c., *ib.* 3880, 3881.

Necessity under the Act of 1875 of application to Parliament for any further increase of the capital account; increase of 15,000 *l.* under the Act, *Gunn* 5537–5541——Total of 130,000 *l.* raised on capital account, there being now an application to Parliament for a further expenditure of 10,000 *l.* in 1877; this is irrespective of the new head-quarters station, *ib.* 5542–5547.

Loans raised and amounts expended on capital account in each year from 1866 to 1875, *App.* 677.

Causes of Fires. Great reduction since 1866 in the per-centage of fires from causes unknown; increased facility in ascertaining the causes of fires, *Captain Shaw* 1460–1471——Careful inquiry by witness into the causes of fires, carelessness in some shape being almost the sole cause, *ib.* 1574, 1575——Further reduction in the number of fires from unknown causes if the brigade be properly strengthened, *ib.* 1652.

See also *Inquests on Fires.*

Central Station:

1. *As to the present Chief Station of the Brigade in Watling-street, and its Inadequacy.*
2. *As to the Steps taken in order to provide a new Station, and as to the Site and Cost.*
3. *As to the Staff required for the Central Station.*

1. *As to the present Station of the Brigade in Watling-street, and its Inadequacy:*

Impracticability of providing accommodation for the men at the head station in Watling-street; special arrangement in order to obviate this drawback, not more than three and a half minutes being required for turning out, whether by day or night, *Captain Shaw* 568–571. 574. 581–583.

Advantage of the site of the Watling-street station, save that the approaches are too confined, *Freeman* 4016–4018——Estimate of from 10,000 *l.* to 12,000 *l.* to be produced by a sale of the station, *ib.* 4018.

Strong objection to a removal of the central station from Watling-street to the south side of the river; sufficient facilities of egress from the station for the engines, *Swanton* 7194–7200.

Report, 1876—*continued.*

CENTRAL STATION—continued.

1. *As to the present Chief Station of the Brigade in Watling-street, &c.*—continued.

Report by Captain Shaw in October 1868 as to the inadequacy of the Watling-street station, and as to the want of a new head-quarter station, *App.* 614, 615——Further report, dated 15th April 1872, urging the removal of the chief station from Watling-street, *ib.* 622, 623——Further report, dated 26th July 1875, showing the very inadequate accommodation of the present station, *ib.* 626, 627.

2. *As to the Steps taken in order to provide a new Station, and as to the Site and Cost:*

Long period for which the question of a new head-quarters station has been before the Metropolitan Board, witness having frequently reported in favour of a new station; resolution recently passed on the subject, *Captain Shaw* 574–591——Expediency of the head-quarters station being in the centre of London, with good approaches to it, *ib.* 584, 585.

Value further attached to an improved central station, whence to work the whole brigade, *Captain Shaw* 1698–1701——Objection to the Registry Office as the site for a central station, though it would be a better site than the present one, *ib.* 1742–1744.

Want of funds at the disposal of the Board for complying with the strong recommendation of Captain Shaw in October 1868 for a removal of the central station to the waterside, *De la Hooke* 3185–3188. 3191–3196——Opinion of the Board that the necessity for new head quarters was not so pressing as Captain Shaw represented it to be, *ib.* 3188. 3196. 3207——Careful investigation on the part of the Board upon the receipt of the foregoing report; conclusion arrived at that the new station would cost 80,000 *l.* for site and buildings, and that the Watling-street premises would produce only about 10,000 *l.*, 3190. 3197–3200. 3219.

Explanation that the question of new head-quarters is still under consideration of the Board, Captain Shaw having again reported on the subject in July 1875, *De la Hooke* 3202–3206——Belief that neither Captain Shaw nor the Board have expressed any opinion in favour of the north over the south side of the river as the site for a central station; approval by the former of a certain site on the south side, *ib.* 3210–3218——Further reference to the estimated cost of a new head-quarters station as amounting, in the aggregate, to 80,000 *l.*, *ib.* 3287, 3288.

Difficulty in securing an eligible site on the Thames Embankment or elsewhere for a central station, on account of the great cost involved, *Freeman* 4018, 4019. 4024–4028——Preference for a site on the north of the Thames, *ib.* 4217——Advantage of the central station, including a drill ground, *ib.* 4375, 4376——Witness is now negotiating for a site, *ib.*

Objection to the intended removal of the head quarters of the brigade from the City to Southwark, *Lovell* 6324. 6387–6391——Circumstance of no representation having been made by the insurance companies relative to the pending removal of the central station, *ib.* 6429–6432.

Proposed establishment of a central station or depôt where the apparatus should be stored, and where recruits should be instructed in the use of the engines, &c.; use to be made of the station also for police purposes, *Harris* 7945–7948.

Grounds submitted by Captain Shaw, in report of 23rd October 1868, in support of a new head-quarters station, *App.* 614, 615——Further report, dated 15th April 1872, in favour of concentrating the central station, offices, workshops, and instruction yard, and of placing the whole in some central position on the waterside; alternative sites suggested, *ib.* 622, 623.

3. *As to the Staff required for the Central Station:*

Increase of not more than fifteen men required in order to provide a staff of fifty at the new central station, *Thompson* 5316, 5317——Opinion that two engines in Watling-street, with six or eight men, would suffice; other localities in the neighbourhood being well suited for new stations, *Swanton* 7201–7206——Very inadequate staff proposed by Mr. Swanton for the central station, *Captain Shaw* 8096, 8097.

See also *Workshops.*

Chelsea Waterworks Company. Explanations and suggestions on the part of the company in 1866 upon the question of the water supply in reference to fires; objections to a constant supply at high pressure throughout the whole district, *App.* 668, 669.

Chemical Processes (*Fire Extinction*). Limited success hitherto of chemical processes for the extinction of fires; anxiety of witness to avail himself of such processes when properly matured, *Captain Shaw* 1694–1697——Destructive effect of chemical solutions when applied to various kinds of goods at fires, *ib.* 1696, 1697——Inquiry made by the Fire Brigade Committee into the question of chemical appliances for fire extinction, *Thompson* 5251–5255.

Chief Officer of Brigade. Experience of witness in charge of the Metropolitan Fire Brigade since its establishment in January 1866, he having previously had charge since 1861 of

Chief Officer of Brigade—continued.

the former brigade of the insurance companies, *Captain Shaw* 99–104——The chief officer's salary is 1,000 *l.* a year, *ib.* 255——Holiday of witness for about a month every year, *ib.* 1185, 1186.

Explanation that reports read at meetings of the Board become in a sense public documents, whilst communications between the Fire Brigade Committee and the chief officer are considered private, *De la Hooke* 3808. 3813–3818.

Chimney Fires. Payments received by way of penalties (not exceeding 20 *s.*) from owners or occupiers in respect of chimneys on fire, *Lushington* 9. 70 ——Total of 4,050 calls for fires in chimneys in 1875; liability of the occupier for a penalty of 1 *l.* in each case, *Captain Shaw* 140, 141——Liability of the public to a fine of 1 *l.* for each chimney fire; remission or reduction of the fine in numerous instances owing to the poverty of the occupiers, *Gunn* 5574–5576.

Christ's Hospital. Particulars relative to some hydrant experiments at Christ's Hospital, as carried out by witness; satisfactory results shown, *G. Shaw* 6177–6192. 6251, 6252.

City of London:

1. *Action of the City Authorities in laying down Hydrants.*
2. *Water Supply; good Pressure available.*
3. *Cost being incurred for Hydrants; limited Area to be covered.*

1. *Action of the City Authorities in laying down Hydrants:*

Steps being taken by the City authorities in laying down hydrants, *Freeman* 4248–4250—— Numerous conditions imposed as to the construction and the laying of hydrants in the City, *Richardson* 5014.

Report submitted by the Gas and Water Committee to the Court of Common Council in July 1874, upon the subject of the water supply to the City, and the question of fixing hydrants upon branch pipes attached to the constantly charged mains, *G. Shaw* 6168–6171——Main object of the Report of the Gas and Water Committee to secure a proper supply of water wherever a hydrant was attached, *ib.* 6174.

Explanation that it is proposed to attach the hydrants to service pipes from the constantly charged mains, so that there will be no interference with the intermittent supply, *G. Shaw* 6206–6208. 6300–6304—— Intention to have supplies of hose, easily accessible, for attaching to the hydrants, *ib.* 6230–6234——Witness hopes the City may be allowed to carry out the hydrant system without being interfered with, *ib.* 6235.

Intention to place hydrants within at least 100 yards of each other; many would be put up at corners of streets, *G. Shaw* 6253, 6254——Uniform kind of hydrant proposed to be used, with the fire brigade screw, *ib.* 6255, 6256—— Intended application of two hoses to each hydrant, *ib.* 6259——Total of about 700 hydrants in private establishments in the City, *ib.* 6271–6273.

Reference had by the City authorities to the value of property in selecting places for hydrants, *G. Shaw* 6274, 6275——Progress being made in laying down public hydrants; intention to provide about 900, *ib.* 6278–6281——Distribution of the hydrants so that one will be within fifty yards of the street front of every house, *ib.* 6286–6289——Facility of applying to the whole metropolis the system of hydrants proposed for the City, 6291–6304.

2. *Water Supply; good Pressure available:*

Good pressure given by the New River Company in the City, so that hydrants may be usefully attached to the mains, *Freeman* 4251–4253——Constant supply in the mains in the City, but not in the service pipes, *Richardson* 4792.

Total of seventy-eight miles of water pipes in the City, twenty-five miles being constantly under pressure, *G. Shaw* 6171, 6172——Sufficiency of service pipes of from four to six inches, with reference to the use of hydrants, *ib.* 6173, 6174——Explanation that the ordinary sustained pressure in the City is 126 feet 6 inches above Trinity high-water mark, *ib.* 6175, 6176. 6270.

Ample supply of water for the efficient working of a system of hydrants, *G. Shaw* 6200——Satisfactory height to which the water rose upon the occasion of an experiment with the hydrants at Warwick-square, near Christ's Hospital, *ib.* 6201, 6202——Sufficiency of the pressure at the Bank of England and other banks in the City, for the efficient working of hydrants, *ib.* 6215–6219.

3. *Cost being incurred for Hydrants; limited Area to be covered:*

Very limited cost of hydrants over the limited area of the City as compared with the rest of the metropolis, *Freeman* 4253–4255; *Richardson* 5008–5013; *Sir J. W. Bazalgette* 5702–5705.

Calculation that in the City the branch services for the hydrants, together with the hydrants,

Report, 1876—*continued.*

CITY OF LONDON—continued.

3. *Cost being incurred for Hydrants; limited Area to be covered*—continued.

hydrants, cost about 20 *l.* in each case, *Bramwell* 5868–5870——Belief that the cost will be 20 *l.* per hydrants, including everything, *Easton* 6084–6086.

Calculation that by laying the proposed service pipes and hydrants gradually, as the streets are being repaired or paved, the cost for the whole city will not exceed 20,000 *l.*, *G. Shaw* 6208–6215. 6226, 6227. 6258–6262 ——Great increase of expense if the streets are opened expressly for the purpose of connecting the service pipes, *ib.* 6208–6211—— Authority obtained from the Corporation for an outlay of 5,000 *l.*, branch pipes being laid as the streets are being re-paved; good progress being made, *ib.* 6227–6229.

Explanation that the city is now doing at its own cost (in the provision of hydrants) what might have been done by the Metropolitan Board under the Act of 1865 at the cost of all the metropolitan ratepayers, *G. Shaw* 6245-6248. 6268, 6269. 6292.

Classification of Goods. Reduced insurance rates for the large wharves in London after an improved classification of goods had been adopted, *Lovell* 6503.

Closing or Removal of Stations. See *Stations.*

Clothing. Supply of a uniform once a year, in addition to the wages, *Captain Shaw* 1740, 1741——Regular allowance made to the men for clothing, *Duck* 2342–2345——Absence of grievance in the brigade in respect of clothes, *Kelly* 2531, 2532——Increased charge under the head of clothing since 1866, *Gunn* 5470–5472.

Coals. Twofold increase of cost as compared with witness' original estimate for coals, *Captain Shaw* 1254–1256——Much larger outlay for coals in recent years than in 1866 and 1867, *Gunn* 5473——*See* also *Floating Engines*, 3.

Constant Service (*Water Supply*). See *East London Water Works Company. Hydrants. Manchester*, 2. *Water Supply.*

Contract Stations. Advantage of contract stations, manned by persons in the neighbourhood, so as not to distribute the force too much, *Captain Shaw* 541-544.

Disapproval of Captain Shaw's suggestion for providing some small contract stations, *Freeman* 3985, 3986.

Report by Captain Shaw, dated 19th April 1869, as to the expediency of employing contract men in outlying stations, *App.* 618, 619.

COST (ANNUAL EXPENDITURE):

1. *Estimates of Captain Shaw at the time of the Transfer of the Brigade to the Metropolitan Board.*
2. *Sources whence the Cost is defrayed.*
3. *Annual Income and Expenditure: Excess of the latter.*

1. *Estimates of Captain Shaw at the time of the Transfer of the Brigade to the Metropolitan Board:*

Estimate of 70,000 *l.* a year by witness at the time of the transfer as the cost of an efficient brigade for the metropolis; this included 674 men and 157 stations, *Captain Shaw* 334-342——Second estimate by witness, the cost being 52,000 *l.* a year for 416 men and ninty-five stations, *ib.* 343–348——Desire expressed by the Home Office that the cost should not exceed 50,000 *l.* a year; third estimate prepared by witness to this effect comprising a force of 277 men with 129 engines and eighty-nine stations, *ib.* 348–355——In the foregoing estimates nothing was allowed for fire escapes, *ib.* 356.

Increased charge for wages, &c., which accounts for the present force not being so large as was estimated for by witness some years ago at a cost of 70,000 *l.* a year, *Captain Shaw* 1045–1053——Reference to a letter from the Home Office to the Metropolitan Board, dated 27th March 1865, as laying down the financial basis for the establishment of the brigade, the annual cost having been placed at 50,000 *l.*, *ib.* 1211. 1213—— Opinion that witness' estimates should now be increased by fifty per cent., on account of the advance in wages and other items, *ib.* 1261–1266.

2. *Sources whence the Cost is defrayed:*

Maintenance of the brigade by a halfpenny rate over the metropolitan area, by a contribution from the fire insurance offices at the rate of 35 *l.* per million of property insured in the metropolis, and by an annual contribution of 10,000 *l.* from Government, *De la Hooke* 2839–2841; *Freeman* 3863-3865. 3879.

Provision of protection for life as well as property out of the funds originally granted for the latter purpose only, *Freeman* 4165-4171; *Thompson* 5273, 5274——Hope expressed that Government and the insurance companies will voluntarily increase their contributions, it being expedient in any case to remove the present rating limit, *Freeman* 4197–4201.

Conclusion that the protection of property from fire should be entirely a municipa obligation in London, as it is in Paris and elsewhere, *Lovell* 6309. 6312. 6324. 6353-6356. 6452–6454.

Report, 1876—*continued.*

Cost (*Annual Expenditure*)—continued.

2. *Sources whence the Cost is defrayed*—continued.

Witness further submits that in principle the fire brigade should be a municipal charge exclusively, and that if it be proposed to increase the companies' contribution the whole question as to the support of the brigade should be re-opened, *Lovell* 6483. 6485-6501.

3. *Annual Income and Expenditure; Excess of the latter:*

Expenditure of the whole amount available annually for the brigade, there being no surplus in hand, *De la Hooke* 3426, 3427——Expediency of increased facilities and appliances for fire extinction so long as the expenditure meets with an adequate return, *Freeman* 4032-4037. 4102-4104——Expenditure in each year of the full amount available for the brigade; expected surplus of from 5,000 *l.* to 6,000 *l.* on the current year, *ib.* 4161-4164. 4182.

Explanation that in 1874 and 1875 there was a deficit of income to meet expenditure, and that the surplus of from 5,000 *l.* to 6,000 *l.* in 1876 will be required to balance such deficiency and to cover the increase of expenditure, *Freeman* 4257-4273——Further increase of expenditure now being incurred, so that the income in 1877 will be absorbed, irrespectively of increase of staff in the coming year, *ib.* 4274-4278.

Entire absence of waste in the application of the funds at the disposal of the Board, *Richardson* 5051——Deficiency of from 3,000 *l.* to 4,000 *l.* in the past year, *ib.* 5054. 5106.

Particulars relative to the annual income and expenditure since 1866, the payments being as a rule in excess of the receipts, *Gunn* 5447 *et seq.*——Practice of carrying forward the deficit balance from one year to another; deficiency of 3,529 *l.* up to 31st December 1875, *ib.* 5449, 5450——Increasing difficulty in recent years to keep the expenditure down to the level of the income, *ib.* 5459-5463. 5516-5518.

Sufficient money now spent upon the brigade to provide all that is required, *Swanton* 7177.

Statement of receipts and payments on working account in each year from 1866 to 1875, *App.* 676.

Estimate of amounts required under various heads for the working expenses of the brigade in 1876; total of 48,148 *l.*, *App.* 676.

See also *the Headings generally throughout the Index.*

Cresy, Mr. (*the late*). Examination as to the duties of the late Mr. Cresy, as principal assistant clerk of the Metropolitan Board, and as to the functions also discharged by him for the fire brigade as architect, *De la Hooke* 3537-3556.

Crown-street Station (*Fire Brigade*). New arrangements proposed by Captain Shaw in December 1870, for the protection of Holborn, in consequence of the removal of the station from Crown-street, Soho, *App.* 650.

Paper submitted by Mr. Swanton, showing the several fires which have occurred in the neighbourhood of Crown-street since the removal or closing of the station, *App.* 685, 686. *See* also *Heal & Sons.*

Crystal Palace. Recommendations by Captain Shaw, under date 11th February 1869, as to the staff to be maintained in connection with the fire brigade station at the Crystal Palace, *App.* 617, 618.

Curricles. Reasons for the refusal of the Metropolitan Board to adopt Captain Shaw's recommendation in December 1868, for the provision of forty-six small engines or curricles, *De la Hooke* 3248-3257.

D.

Dayman, W. H. Gratuity of 20 *l.* to W. H. Dayman, discharged in ill-health after six years and four months in the service, *Captain Shaw* 787-789.

De Beauvoir Town and South Hackney. Explanation relative to the closing of the stations at De Beauvoir Town and South Hackney; excellent stations provided elsewhere, *Thompson* 5360.

De la Hooke, Harry. (Analysis of his Evidence.)—Is chief assistant clerk of the Metropolitan Board of Works, and has acted as clerk to the Fire Brigade Committee since the transfer of the brigade to the Board, 2835-2838.

Maintenance of the brigade by a halfpenny rate over the metropolitan area, by a contribution from the fire insurance offices at the rate of 35 *l.* per million of property insured in the metropolis, and by an annul contribution of 10,000 *l.* from Government, 2839-2841——Transfer to the Board by the Fire Brigade Act of the powers previously entrusted

Report, 1876—*continued.*

De la Hooke, Harry. (Analysis of his Evidence)—*continued.*

entrusted to the local authorities in regard to the regulation of fire plugs, &c., 2842–2845——Provision in the Metropolis Water Act of 1852 as to a constant supply being given upon the requisition of four-fifths of the owners and occupiers, 2846–2848.

Power of the Metropolitan Board under a further Act in 1871 to require the water companies to give a constant supply within four months after notice to that effect, 2848, 2849—— Power also of the Board under this Act to require the companies to put down hydrants as well as plugs; that is, at the cost of the Board, 2851–2854—— Summary of the reasons why the Board have not initiated any measure for a constant supply under the Act of 1871, though the Select Committee on the Bill and other Committees and Commissions have reported in favour of such supply, 2855–2861.

Circumstance of the East London and Kent Water Companies having initiated a constant supply in parts of their districts, under the Act of 1871; 2862–2864——Examination to the effect that the East London Company have on several occasions called the attention of the Board to the fact that a constant supply was extensively provided in their district, but that the Board have declined to provide hydrants until a satisfactory system could be applied to the whole metropolis under amended legislation, 2865–2886. 2899, 2900. ——Recent date at which the Board came to the decision not to incur the immense expense involved in putting down hydrants throughout the metropolis, 2884, 2885—— The Board have not, however, decided not to avail themselves of a constant supply, 2885.

Circumstance of Major Bolton having reported that hydrants might have been substituted for fire plugs upon about one-third of the entire mains of the metropolis, which are constantly charged, 2887–2890——Authority of Sir Joseph Bazalgette and of Captain Shaw upon which the Board have concluded that the constant supply was not given under such conditions as would justify the expense of hydrants, or would enable engines to be dispensed with, 2891–2898.

View of Sir Joseph Bazalgette adverse to the provision of hydrants unless a sufficient pressure were ensured, 2893–2895——Opinion of Captain Shaw that the great expense of hydrants was not justifiable, irrespectively of the question of engines being dispensed with, 2896.

Reference to the closing of the fire brigade station in Wells-street, Oxford-street, as having been decided upon, by the advice of Captain Shaw, before the transfer of the brigade to the Board, 2901, 2902. 2904——Re-arrangement of stations by the Board, involving the removal of the station in Farringdon-street and one or two others, though remonstrances were made by the insurance companies, 2903–2908——Formation of a new station in Farringdon-road, about a third of a mile from the former station in Farringdon-street, 2908, 2909.

Advice given by Captain Shaw in December 1871 against the purchase of small floating engines on the plan proposed by the insurance companies; that is, as drawing more water than would justify the outlay, 2910–2913. 2920–2924——Report subsequently made by Captain Shaw in July 1874 in favour of the provision of some steam launches for taking the small rafts quickly and closely to river side fires; careful attention given by the Board to this proposal, though nothing definite has yet been done, 2914–2919. 2924, 2925.

Action of the Board in December 1871 in accordance with the views of Captain Shaw adverse to the proposal of the insurance companies relative to a connection between the mains of the several water companies, 2926–2931——Explanation in reference to a statement by Captain Shaw in the foregoing matter, that the Board seemed unwilling that he should place himself in direct communication with the water companies; no communication was made to the companies by the Board, 2927–2931. 2934–2938——Representation of the London insurance companies generally by the salvage corps, 2932, 2933.

Report by Captain Shaw in December 1871 adverse to the proposal of the insurance companies for telegraphic communication between the police stations and the fire brigade stations, 2939, 2940—— No recommendation in favour of such communication has since been made by Captain Shaw to the Board, 2941–2944.

Evidence to the effect that since 1868 no special complaint has been made to the Board either by the men or by Captain Shaw upon the subject of overwork, 2945–2952. 2965–2975——Prompt compliance with the recommendation by Captain Shaw in October 1868 for the appointment of thirty-five additional men as a means of removing the complaints of the men as to overwork, 2953–2956——Increase from 373 to 395 in the number of men between the 1st January 1869 and 1st January 1876; addition of two floating stations and sixteen fire-escape stations during this period, 2957–2964.

Resolution adopted by the Board in November 1865, that, as a general rule, the men should be obliged to live at (not in) the stations to which they were attached, 2973, 2974. 2976, 2977—— Decision in March 1868, upon the recommendation of Captain Shaw, that in future married men's quarters should not be provided for men below the second class, 2974, 2975—— Erection of thirty stations since 1865, several of which do not provide sufficient accommodation for them; this does not apply to those built since 1869, when the previous limit as to capital outlay was removed, 2978–2981—— Doubt

Report, 1876—*continued.*

De la Hooke, Harry. (Analysis of his Evidence)—*continued.*

as to the men having ever represented that it was a hardship to be obliged to live outside the stations, 2982, 2983.

Dissatisfaction expressed by the men some years ago with the way in which rewards for saving life were dispensed by the Society for the Protection of Life from Fire communication with the society on the subject in 1871, since which the Board have been under the impression that the men were satisfied, 2984–3003—— Suggestion by Captain Shaw that a badge of merit should be given in lieu of a pecuniary reward for saving life; explanation as to this proposal not having been carried out through the death of a gentleman who had undertaken to design a badge; 2988–2991. 2995–3002. 3243, 3244.

Resolution adopted by the Board at the time of the transfer of the brigade in accordance with the conditions demanded by the men on the subject of superannuation, and the men's contributions to the fund, 3004, 3005——Decision by the Board at this period that the widows of men killed on duty should receive a pension; departure from this undertaking in the case of a woman named Ford, for whom the public had subscribed a very large sum, 3005–3011——Explanation that the gratuities and pensions are not calculated on any definite scale, each case being dealt with on its own merits, 3012–3024.

Instances of gratuities by returning the contributions previously paid to the savings fund, with something added, 3014–3020—— Pension of 14 *s.* a week to a man named Joseph Perkins, who had served thirty years and ten months; larger pension if Perkins had been in the police, 3021–3026—— Pension of 15 *s.* a week in the case of a man named Stephen Martin, 3026, 3027——Pension of 16 *s.* a week to a man named Radford, after seventeen years' service; statement hereon as to the relative pension in the police, 3028–3037——Gratuity of 20 *l.* awarded to the widow of Radford, the latter having died shortly after he was pensioned, 3038–3040.

Memorials from the men to the Board in June 1873 and September 1874 relative to the superannuation question; due consideration given to the subject by the Board, a scheme having been finally approved in March 1876; 3041–3044. 3055–3064—— Statement that neither in November 1874 nor June 1875 did Captain Shaw submit any further memorial from the men, 3045, 3046. 3052–3054——Rejection by the men of a scheme proposed by an individual member of the Board in January 1875, whereby the pensions were to be paid entirely out of their own contributions, 3047–3051.

Desire expressed by the men, in April 1876, that the scheme of superannuation promoted by them in February 1874 should be carried out; rejection at the same time of the scheme proposed by the Board in March last; 3055–3068——Dissent of the men from the proposal of the Board that superannuation should not be claimed till the age of sixty, 3065—— Difference between the men and the Board as to the deduction to be made from the pay; the former have not stated that they would agree to a contribution of 2½ per cent., 3065–3067——Suspended further action by the Board in view of the inquiry by the present Committee, 3069.

Examination explanatory in detail of the extent to which the Board have complied with the several reports of Captain Shaw since July 1866, submitting recommendations for an increase of force, 3070 *et seq.* 3223—— Reference to Captain Shaw's scheme of October 1872 as involving so large an expenditure that the Board did not seriously consider it, 3128–3131—— Particulars relative to the additional fire-escape stations established between February 1870 and May 1872, together with the number of additional men appointed, 3131–3180.

Want of funds at the disposal of the Board for complying with the strong recommendation of Captain Shaw in October 1868, for a removal of the central station to the waterside, 3185–3188. 3191–3196——Opinion of the Board that the necessity for new head quarters was not so pressing as Captain Shaw represented it to be, 3188. 3196. 3207—— Further report by Captain Shaw in April 1872, recommending that the workshops should be attached to the central station, and that the latter should be on the waterside, 3189, 3190—— Careful investigation on the part of the Board upon the receipt of the foregoing report; conclusion arrived at that the new station would cost 80,000 *l.* for site and buildings, and that the Watling-street premises would produce only about 10,000 *l.*, 3190. 3197–3200. 3219.

Explanation that the question of new head quarters is still under consideration of the Board, Captain Shaw having again reported on the subject in July 1875; 3202–3206—— Prospect of a site being fixed upon where the workshops can be combined with the central station, 3206. 3208, 3209—— Belief that neither Captain Shaw nor the Board have expressed any opinion in favour of the north over the south side of the river as the site for a central station; approval by the former of a certain site on the south side, 3210–3218——Situation of the present workshops in the Waterloo-road, 3220–3222.

Several stations taken over by the Board from the parishes; adoption at the same time of Captain Shaw's recommendation for providing ten new manual engines, 3224–3231—— Cost of about 400 *l.* represented by each steam fire-engine, whilst a manual costs rather less than 100 *l.*; 3230——Compliance with Captain Shaw's suggestion in December

Report, 1876—*continued.*

De la Hooke, Harry. (Analysis of his Evidence)—*continued.*

December 1866, that the parish engineers be appointed engineers in the brigade, 3232——Adoption also of Captain Shaw's recommendations in January 1867, as to the pay and promotion of third-class firemen, 3233.

New fire-escape stations established at Deptford and the Broadway, as recommended by Captain Shaw in April 1868; 3235–3238——Appointment of sixty additional men adverted to in connection with representations as to the excessive duty in the force up to October 1868; 3239–3242——Explanation as to the Board having closed the stations in Sloane-square and the Horseferry-road, 3245–3247——Reasons for the refusal of the Board to adopt Captain Shaw's recommendation in December 1868, for the provision of forty-six small engines, or curricles, 3248–3257.

Explanation as to the Board not having complied with a recommendation of Captain Shaw for supplying the turncocks with standpipes, 3258–3261——Non-establishment hitherto of a station at Plumstead, as applied for by the local authorities, 3263——The Isle of Dogs is about to have a station, 3264——Provision of four new hose vans, instead of eight, as recommended by Captain Shaw in December 1875; 3267——Steps being taken to provide new accommodation for the fire-escapes, and for the instruction of the men therein, in view of removal from Grand Junction Wharf, now used for those purposes, 3268–3270.

[Second Examination.]—Further explanation that the Board have not decided not to avail themselves of a constant supply, though they have decided not to put down hydrants throughout the metropolis, 3272, 3273——Explanation also that the decision as regards hydrants has been founded on the chief engineer's report, irrespective of the question of expense, as well as upon Captain Shaw's views in concurrence with such report, 3273–3286——Further reference to the estimated cost of a new head-quarters station as amounting in the aggregate to 80,000 *l.*, 3287, 3288.

Sundry reports from Captain Shaw delivered in, with explanations thereon, upon the subject of increase of staff and plant, 3289 *et seq.*——Full compliance with reports in January and August 1866, suggesting the purchase of additional engines, 3291, 3292——Prompt compliance with a report in February 1868, recommending the appointment of additional sub-engineers, 3293, 3294——Extent to which the Board carried out certain recommendations in different reports in 1868 for an increase of fire escapes, and of watch boxes, 3295, 3296.

Explanation in connection with the refusal of the Board to comply with suggestions by Captain Shaw in February 1869, for the continued employment of supernumeraries, 3297–3299. 3525——Authority given to Captain Shaw in May 1870 to rent a place for the training of fire-escape men, 3299–3301——Approval also by the Board of Captain Shaw's suggestions for a new arrangement at the Holborn Station, in consequence of the discontinuance of the station in Crown-street, Soho, 3301.

Compliance with a recommendation by Captain Shaw in October 1871, for the establishment of six new fire-escape stations, 3301——Partial compliance with suggestions in March 1873, for the adoption of certain arrangements for conveying hose on shore from the floating engines at low water, 3301–3303——Adoption by the Board of a report in November 1874, recommending that twelve stand-posts should be placed in a certain district of the Kent Waterworks Company, 3303, 3304.

Examination showing that only to a very limited extent have the Board authorised the fixing of hydrants to the constant supply mains of the East London Company; several communications from the company on the subject, and way in which dealt with, 3305–3355——Circulation by the Board among the water companies of a report by Captain Shaw in 1866 relative to hydrants; doubt as to the Board having adopted this report, 3307–3313. 3419–3421——Statement to the effect that the Board have ordered thirty hydrants to be fixed in the East London Company's district; belief as to this order having been carried out, 3324–3330. 3351–3355.

Reference to a letter from the Board to the East London Company as setting forth the grounds for the conclusion that it was not advisable at present to lay down a large number of hydrants throughout the metropolis; difficulty especially on the score of insufficient pressure, 3356–3367——Unfavourable result of experiments with hydrants in one of the districts under constant supply south of the Thames, 3356. 3360–3363.

Compliance of the Board with Captain Shaw's reports in May and October 1868 asking for additional men, whereas in October 1872 he asked for an increase in the number of firemen to 931; 3368–3377——Probability of much time being occupied by the firemen in accounting, there being one man at each station entrusted with this duty, 3378–3382——Mature consideration given by the Board to the whole question of hydrants, and very careful inquiries made before coming to any decision on the subject, 3384–3389. 3461, 3462. 3474–3478.

Adoption by the Board of every recommendation made by Captain Shaw relative to the pay of the men (save in the case of the superintendents), 3390——Considerable

De la Hooke, Harry. (Analysis of his Evidence)—*continued.*

number of men in receipt of special pay of 3*s.* 6*d.* a week in addition to their wages, 3391–3397——Pension given in the case of all men who have served more than eleven years, and have become incapacitated in the service, 3398——Careful consideration given in the matter of gratuities, Captain Shaw being always present on such occasions, 3399–3403.

Explanation that all recent communications from the insurance companies to the Board have come through the London Salvage Corps, 3404, 3405——Belief as to all representations made by the companies receiving full consideration at the hands of Captain Shaw and of the Board, 3407–3409——Statement as to the staff of the fire brigade not coming under the Superannuation Act of 1866, and as to the Board having only recently prepared a scale of pensions under the powers of the Fire Brigade Act, 3410–3418.

Gradual increase from 30,913*l.* in 1866 to 43,514*l.* in 1875 in the produce of the halfpenny consolidated rate, 3422——Contribution of 11,050*l.* received from the insurance companies in 1866, and of 18,093*l.* in 1875; 3424, 3425——Expenditure of the whole amount available annually for the brigade, there being no surplus in hand, 3426, 3427.

Inability of witness to give the definite interpretation placed upon the term "constant service" by the Fire Brigade Committee, 3428–3430——Substantial accuracy of a certain map, purporting to show the districts covered by constant supply, 3431–3433. 3460.

Explanation with further reference to the non-provision of a particular kind of float recommended by the insurance companies; views of Captain Shaw as to the advantage of floats drawing only six or eight inches of water, 3435–3437——Large saving of fuel estimated by Captain Shaw by the use of small steam tug-boats as proposed by him, 3438–3441——Further statement as to the cause of the delay in adopting Captain Shaw's suggestions for a new kind of float; decision shortly expected on the subject, 3442–3445.

Very exceptional employment of supernumeraries at the present time, 3446——Further reference to the pension awarded in the case of Radford as having been arrived at without consideration of the value of his lodgings and fuel, 3447–3450——Investigation made by the Board into the causes why men leave the brigade; these can be explained by a member of the Board, 3451——Circumstance of there having been no tabular return since 1868 of the hours of duty of the men, 3452–3454.

Willingness of the Board to have awarded the widow Ford a pension for life but for the large sum subscribed for her by the public, 3456, 3457——Absence of complaint to the Board as to the pay of the men, 3458, 3459.

Probability of the East London Company having seventy miles of mains under a constant pressure of at least forty feet without any hydrants having been attached, 3463–3465—— Circumstance of the Board not having accepted an offer by this company to instruct the firemen as to the position of their mains and services, &c., 3466–3468—— Cognisance of the Board as to the companies generally having each of them a large mileage under constant supply, 3469–3473.

Discontinuance by the Board of the practice of reporting to the water companies all cases of late attendance of turncocks, Captain Shaw having stated that the companies do all in their power to facilitate the work of the brigade, 3479–3481——Explanation as to the Board not having considered it necessary to put up fire plug indicators or tablets, 3482–3486—— Further reference to the distance between the former station in Farringdon-street and the new one in Farringdon-road; belief as to Captain Shaw having been opposed to the change of site, 3487–3490.

Explanation with further reference to the closing of the stations at Sloane-square and Horseferry-road, the former station having been closed in the face of strong objections thereto by Captain Shaw; correspondence on the subject between the clerk of the Board and Captain Shaw in December 1868; 3491, 3492. 3502–3513——Objection also made by Captain Shaw in December 1870, to the closing of the Waterloo-road station; this station was not closed till 1872 and was re-opened in 1875; 3493–3501——Belief that there has been no evil result from the closing of Sloane-square station, 3514.

Recommendation by Captain Shaw in February 1868 that firemen should not be provided with married men's rooms until they had been promoted to the second class, 3515–3517——Circumstance of some third-class firemen having petitioned in 1871 upon the subject of married men's quarters, 3518–3521.

Doubt as to Captain Shaw having ever told the Fire Brigade Committee that if he had the money to dispose of he would do so by immediately increasing the brigade, 3526 ——Explanation as to the Board not having had power to expend upon staff any of the capital sums devoted to new stations; saving of rent by the latter expenditure, 3526–3530——Circumstance of the Board not having applied to Parliament for power to raise funds for carrying out the large extensions proposed by Captain Shaw, 3531–3536.

Examination

Report, 1876—*continued.*

De la Hooke, Harry. (Analysis of his Evidence)—*continued.*

Examination as to the duties of the late Mr. Cresy, as principal assistant clerk of the Board, and as to the functions also discharged by him for the fire brigade as architect, 3537–3556——Explanation with further reference to the circumstances under which directions were given (to Mr. Cresy) for the preparation of a medal or badge of merit; recommendations hereon by Captain Shaw in report in May 1868; 3556–3575.

Justification of the course pursued by the Board in changing the term "superannuation fund" into "savings fund," the fund never having possessed the conditions of a superannuation scheme, 3576–3583——Conclusion as to the petition from the men relative to a superannuation scheme not having been officially submitted to the Fire Brigade Committee on 9th November 1875; 3584–3590——Explanations on the subject of Mr. Thompson's scheme, witness submitting that it was not adopted by the Committee; reference hereon to the accountant's report upon the scheme, 3591–3616.

Statement as regards a return (*App.* 629), showing the cases of men who have broken down in the service of the brigade, that such return was prepared by witness in strict accordance, as he conceives, with the terms of the order of the present Committee, 3617–3633——Reference to the case of John Taylor, killed by falling from a fire escape; application for compensation made by his father, but refused on the ground that he had not made it clear that he was at all dependent upon his son, 3634–3640.

[Third Examination.]—Circumstance of the servants of the Board, other than the fire brigade, not contributing anything towards their superannuation, 3642–3644——Closing of the Waterloo-road station further adverted to as having been in force from May 1872 till November 1875; use eventually made of the station for workshops, whilst since April 1876 an engine has been placed there, 3645–3651.

Examination upon the question whether certain fires which have occurred since the removal of the Sloane-square station would not have been more promptly and effectually dealt with had that station not been closed, 3652–3685. 3841, 3842——Doubt as to the engines having been late in arriving at the Pantechnicon fire, or as to a deficiency of men having been experienced, 3674–3685. 3692. 3841, 3842——Information given to the insurance companies by means of the daily report or return by Captain Shaw of all fires which have occcrred in the previous day; absence of any special report by the Board when large fires occur, 3677–3680. 3686–3691. 3843–3845.

Evidence in detail with further reference to the case of John Taylor, who died from injuries received through falling from a fire escape, which broke while being tested; explanation more especially as to his parents having been refused any compensation, 3693–3701.

Further explanations in connection with the action of the Fire Brigade Committee in the case of the widow of Ford (who, in saving five lives from fire, lost his own), 3702–3709——Allowance of 1*l.* a week to Ford's widow for a year, when it was stopped on account of the income derived by her from public contributions, 3704–3709.

Particulars relative to the case of a man named Guernsey, killed at the fire at the City Flour Mills in November 1872; explanation as to no compensation having been awarded to Guernsey's father, inasmuch as it was ascertained that he was not dependent on his son, 3710–3726. 3794–3802. 3850–3853——Payment, in Guernsey's case, of 1*l.* 18*s.* 6*d.* in excess of the usual amonnt allowed for funeral expenses, 3713——Recommendations by the coroner's jury that some award be made to the relations of Guernsey; application also by Guernsey's father, but without success, 3714–3722. 3794–3802.

Practice of giving 5*l.* for the funeral expenses of each man dying while in the service of the brigade; witness was not aware that 10*l.* was formerly given, 3727–3733——Information relative to the case of George Ray, whose leg was amputated through injuries received in falling from a horse, and who received a gratuity of 10*l.*; question hereon whether Ray was not injured whilst on duty, and whether this was not the view of Captain Shaw, 3734–3752. 3787–3793. 3846–3849——Independent opinion exercised by the Board, irrespective of Captain Shaw, as to what constitutes the men's duty, 3741–3747. 3796–3807.

Explanation as to compensation not having been awarded to a man named Smart in respect of seventeen years' previous service under the parochial authorities at Greenwich, 3753. 3757–3763——Circumstance of previous service not having been allowed to count in the case of men taken over from the Society for the Protection of Life from Fire, 3755, 3756——Absence of any understanding that the Board were to take into consideration previous service under the parishes, 3759–3762——Instances of apparent inequality in the amount of gratuity with reference to the length of service, 3764–3773.

Statement as regards Radford's case, to the effect that Captain Shaw did not report that Radford was injured in the execution of his duty, though he made a strong representation as to his excellent conduct, 3774–3783, 3809–3812——Failure of an attempt in the Fire Brigade Committee to increase the funeral expenses allowance from 5*l.* to 7*l.* 10*s.*; previous report by Captain Shaw as to the insufficiency of the former amount, 3784–3786——Considerable payments for travelling and incidental expenses of firemen, 3788——Belief that it is not the practice in any branch of the public service to give gratuities to relatives, who are not dependents, of deceased public servants, 3794, 3795.

Report, 1876—*continued.*

De la Hooke, Harry. (Analysis of his Evidence)—*continued.*

Explanation that reports read at meetings of the Board become in a sense public documents, whilst communications between the Fire Brigade Committee and the chief officer are considered private, 3808. 3813-3818.

Statement showing that Captain Shaw made no objection in the first instance to the removal of the Sloane-square station, whilst he approved of the sites at Victoria-street and South Parade; large facilities provided at the latter stations, 3819–3834——Several fire-escape stations in the districts near Sloane-square, 3835–3837——Telegraphic communication between all the fire-engine stations but not between the fire-escape stations, 3838–3840.

Deductions from Pay. Explanation that besides the deductions from pay for rent and fines, there is a deduction for savings, and that during suspension for misconduct the whole pay is stopped, *Captain Shaw* 1367–1373.

Deptford. Recommendation by Captain Shaw, in March 1868, that there be a fire-escape at Deptford, and that two men be added to the force in order to work such escape alternately, *App.* 608.

Discipline. Circumstance of the Fire Brigade Committee not having made inquiry into the detailed management of the force, *Captain Shaw* 1207, 1208——Adoption of witness' recommendations to the Board as to promotions and dismissals, the discipline being entirely in his hands, *ib.* 1321, 1322.

Independent opinion exercised by the Board, irrespective of Captain Shaw, as to what constitutes the men's duty, *De la Hooke* 3741–3747. 3796–3807——Explanation as to the Board not interfering with Captain Shaw on the score of discipline, though witness submits that this may be so modified as to admit of the men's obtaining more rest, *Freeman* 4218–4222.

Explanation with further reference to the reluctance of the Board to interfere with Captain Shaw in matters of discipline; full control however in matters involving expenditure, *Freeman* 4370–4372. 4394–4398——Strict discipline exercised by Captain Shaw, witness suggesting that by some relaxation in this respect the men might obtain more rest, *Thompson* 5292–5299.

Discontent. Readiness of a considerable number of men to come before the Committee and to represent the objections and discontent felt in the force, on the score of pensions, &c., though they are very unwilling to appear in any hostility to the Board under which they serve; invidious position in which the men would be placed as witnesses before the Committee, *Captain Shaw* 830–834——Suggestion as regards the attendance of men from the brigade that it will suffice to take evidence from one man in each rank, *ib.* 877–879.

Opinion as to the popularity of the service, though men frequently resign through the absence of a superannuation fund and the want of more time off duty, *Port* 2114–2125. 2258–2263——Conclusion as to the unpopularity of the service, as shown by the frequent resignations, *Duck* 2368, 2369——Satisfaction of the men with their pay, their discontent being caused chiefly by the want of a superannuation scheme and the long hours of duty, *Kelly* 2499, 2500.

Reference to a letter from the men in December 1872, expressing satisfaction with their increased rates of pay; inference that they were not in a state of discontent through there being no superannuation scheme, *Richardson* 4620–4623——Impression that prior to 1872 the Board had not received any representations as to the want of superannuation, *ib.* 4623–4627.——*See* also *Hours of Duty. Promotion. Recruits. Superannuation.*

Distribution of Stations, &c. Opinion that the principle of distribution of force has been carried too far, though witness cannot say there has been neglect in the matter of concentration, *Captain Shaw* 1233–1237——Evidence favourable to the stations being more concentrated, rather than more scattered, *Richardson* 4790. 4988–4990.

Abundant protection afforded in the outskirts, whilst the large risks in the City are not sufficiently protected, *Lovell* 6397. 6436-6445. 6464–6467——Duty doubtless of the Metropolitan Board to protect the outlying districts, such as Shooter's Hill, though the contribution by the assurance companies should not be diverted for such purpose, *ib.* 6546–6551. 6557–6560. 6645–6647.

Economy of power and of outlay by distributing the 115 engines now maintained at fifty-two stations, over an increased number of stations, and by using police stations for this purpose, *Swanton* 6995–7001. 7013–7016——Several fire brigade stations with three engines, whilst in Watling-street there are five, *ib.* 7172.

See also *Docks. Stations. Strength of the Brigade.*

District Arrangements. Division of the metropolis into four districts with reference to the arrangement of the stations, each district being under a superintendent, who is in telegraphic communication with all the stations in his district and with the central stations, *Captain Shaw* 113——Satisfactory working of the system whereby it is left to the officer

on

District Arrangements—continued.

on duty at head quarters in each district to decide upon the force to be sent to any fire, *Captain Shaw* 526, 527.

Proposition for dividing the metropolitan police area into eight districts, and for the organisation of the fire brigade force, as a part of the police, in each district, *Harris* 7907–7922.

Docks. Much smaller force maintained in the C district, which comprises the docks, than was estimated for by witness, *Captain Shaw* 395–408——Very large area of the C district, which comprises the Tower Hamlets, and includes most of the docks and and river side warehouses, *ib.* 507–511——Total of thirty-eight men stationed in the C district, there being also a floating engine near the West India Dock entrance; average of about eighteen men available at night, *ib.* 512–522. 525——Much larger number of fires in the C district than in any other district, *ib.* 517, 518. 523, 524——Advantage if a new station could be provided in Wapping in lieu of that in Wellclose-square, *ib.* 603–606.

Fair share of protection given to the docks, *Captain Shaw* 1424–1427——Large reduction, however, in the number of stations in the district comprising the warehouses and docks, *ib.* 1428–1435.

Increase of protection given generally to the docks out of the increased expenditure upon the brigade, without any neglect, however, of the metropolis generally, *Captain Shaw* 1526–1537.

Large provision made by the docks for their own protection, *Freeman* 4227. 4241——Failure of an application to the dock company for a site for a new station, in lieu of that in Wellclose-square, *ib.* 4241. 4256——Doubt as to the dock companies now maintaining engines for protection not only of their buildings, but of the goods therein; charge of the halfpenny rate only on the buildings, *Thompson* 5350–5356.

Special importance to the insurance companies of effectual precautions close to the City warehouses and the docks, where property of immense value is concentrated, *Lovell* 6397.——*See* also *Wellclose Square.*

Dockyards. Satisfactory operation of the system in the dockyards, whereby the police form exclusively the fire brigade, *Harris* 8049, 8050.

Downham-road (*Dalston*). Want of a fire-brigade station near Downham road, *Harris* 7934–7936.

Drighlington Local Board v. *Bower.* Question considered whether the judgment in the case of the Drighlington Local Board *v.* Bower does not establish the legal immunity of insurance offices from liability for fire protection, save where there are special Acts to the contrary, *Richardson* 4661. 4664. 4669–4671. 4895–4902.

Drill and Instruction. Careful system of drill to which recruits are subjected; varying time occupied, some men requiring a very long drill, *Port* 2155–2171——Relative time required for the drilling and training of a fireman and of a policeman, *Harris* 8018–8021.

Report by Captain Shaw, under date 7th February 1876, as to the accommodation required for the instruction class, *App.* 627.

Communication from Captain Shaw to the Metropolitan Board, dated 30th March 1876, as to the steps to be taken as regards the drill class, &c., on the abandonment of the premises at Grand Junction Wharf, *App.* 628. ——*See* also *Training.*

Drivers. Doubt as to there being any use in training the drivers as firemen, *Richardson* 5027.

Duck, George. (Analysis of his Evidence.)—Is a first-class engineer in the Fire Brigade, and is in charge of the station in the Old Kent-road, 2275, 2276——Total of six men under witness, including those required for working two fire-escapes attached to the station, 2277–2279. 2312, 2313——Necessity of taking three men out with each steam-engine to a fire, only one man being left available in the event of a second fire, 2280–2286.

Concurrence in the evidence of Captain Shaw and Mr. Hamlyn, as to the importance of a system of superannuation, in order to retain men in the brigade, 2287–2293. 2337–2341——Opinion that a direct increase of wages would not be effectual in causing men to stop in the brigade, 2292–2337——Considerable discontent in the service, owing to the long-continuous hours of duty; expediency of an increase of force, so that the men may have some time at their disposal, and may count upon one night a week off duty, 2294–2297. 2347–2363. 2377–2383.

Slight delay caused in turning out for fires, owing to three of witness' men not living in the station; average of three and a half minutes as the time occupied, 2298–2311——Explanation that witness' pay is 2 *l.* 8 *s.* 6 *d.* a week, and that lodgings, coal, and gas may be

Duck, George. (Analysis of his Evidence)—*continued.*

put at about 15 *s.* a week in addition; inadequacy of this remuneration, as compared with that of a first-class inspector of police, whose time is his own after eight hours' duty, 2315-2336. 2347-2350. 2358-2360.

Regular allowance made to the men for clothing, 2343-2345——Inability of the men to save anything out of their wages, 2346——Preference for sailors as recruits, 2364-2367——Conclusion as to the unpopularity of the service, as shown by the frequent resignations, 2368, 2369——Value attached to the fire-escapes, though hitherto they may not have saved many lives, 2370-2376.

Duties of Brigade. Paper by Captain Shaw, under date 16th March 1869, containing a summary of the duties of the fire brigade, *App.* 618.——*See* also *Hours of Duty.*

E.

East London Waterworks Company. Large portion of the district of the East London Company under constant supply, witness being very doubtful, however, as to the expediency of the Metropolitan Board laying down hydrants over only a small portion of the metropolis, *Captain Shaw* 1104-1112.

Circumstance of the East London and Kent Water Companies having initiated a constant supply in parts of their districts under the Act of 1871, *De la Hooke* 2862-2864——Examination to the effect that the East London Company have on several occasions called the attention of the Board to the fact that a constant supply was extensively provided in their district, but that the Board have declined to provide hydrants until a satisfactory system could be applied to the whole metropolis under amended legislation, *ib.* 2865-2886. 2899-2900.

Explanation showing that only to a very limited extent have the Board authorised the fixing of hydrants to the constant supply mains of the East London Company; several communications from the company on the subject, and way in which dealt with, *De la Hooke* 3305-3355——Statement to the effect that the Board have ordered thirty hydrants to be fixed in the company's district; belief as to this order having been carried out, *ib.* 3324-3330. 3351-3355——Statement as to hydrants not having been fixed in the Plumstead district of the company, *ib.* 3332-3336.

Probability of the East London Company having seventy miles of mains under a constant pressure of at least forty feet without any hydrants having been attached, *De la Hooke* 3463-3465——Circumstance of the Board not having accepted an offer by this company to instruct the firemen as to the position of the mains and services, &c., *ib.* 3466-3468.

Reference to a complaint by the East London Company, in December 1872, as to the great waste in connection with fire-plugs, *Richardson* 4684——Comment upon the reply of the East London Company to the circular from the Board, enclosing Captain Shaw's report of 1866; nothing was done by the Board as regards constant service, in consequence of this reply, *ib.* 4794-4801.

Average of less than twenty pounds pressure in the East London Company's district; entire insufficiency of the pressure in the constant supply portions of the district to meet the requirements of Captain Shaw by means of hydrants, *Sir J. W. Bazalgette* 5593-5604.

Statement as to the East London Company not being bound to give a higher pressure than forty feet above the level of the pavement, and as to this pressure being reduced when there is a draught upon the main, *Bramwell* 5822. 5826——Thinner pipes proposed to be used by the compony on account of the smaller pressure than in the case of the other companies, *ib.* 5823, 5824——Stipulation in the case of the company as to cisterns being obligatory, and as to high service being paid for when the water is delivered at more than twenty feet above the pavement, *ib.* 5833.

Pressure of only forty feet in height professed to be given by the East London Company; usefulness, however, of hydrants and service pipes with a very low pressure, *G. Shaw* 6266, 6267. 6282-6285.

Draft of the proposed reply by the Metropolitan Board to letter from the East London Company of 14th January 1875, upon the question of placing hydrants on the mains of the company and throughout the metropolis, *App.* 643-645.

Statement on the part of the company that they are prepared to comply with the provisions of the Acts 15 & 16 Vict. c. 84, and 28 & 29 Vict. c. 90, *App.* 670.

Easton, Edward. (Analysis of his Evidence.)—Confirmation of Mr. Bramwell's evidence as to the statutory pressure of the different water companies, 6010, 6011——Entire inadequacy of the pressure generally for the efficient working of a system of hydrants throughout the metropolis, 6012-6021——Exceptional conditions in the case of the Temple,

Easton, Edward. (Analysis of his Evidence)—*continued.*

Temple, so that hydrants have been fixed with good effect, a special main having been laid down for their supply, 6012, 6013——Exceptional conditions also in the City, the pressure of the New River Company being satisfactory, and larger mains having been laid down in connection with the hydrants, 6012, 6013. 6017, 6018.

Disadvantage in having hydrants in some districts and not in others; confusion created thereby in the firemen, 6014, 6015. 6020——Better supply of water by means of plugs than of hydrants if the pressure is very low, 6016, 6017——Conclusion that the advantages to be derived from the application of hydrants throughout the metropolis would not be commensurate with the great cost involved, 6016. 6021——Great importance doubtless of facilities, as at Manchester, Liverpool, and Brighton, for directly applying water to fires without the aid of engines, 6022, 6023.

Constant supply at Brighton by means of reservoirs at four zones varying in height from 150 feet to 430 feet above the sea, 6023, 6024——Use of the screw-down hydrant at Brighton, fire engines being entirely dispensed with, 6024, 6025——Valuable assistance rendered by the police at fires, there being also a fire brigade under the police; prompt action taken by the former at the outbreak of any fire, hose reels and fire escapes being kept at the chief police stations, 6025, 6026. 6056-6064. 6094-6111. 6120-6130. 6135-6144.

Importance of the facility of uniting the several zones at Brighton, 6026——Great difficulty and expense of any joint working of the eight different companies in London, the pressure varying in each case, 6027——Varying size of the mains at Brighton from ten to eighteen inches, 6028, 6029——Special arrangements, by means of a new set of pipes, whereby there is an intermittent as well as a constant service at Brighton for domestic purposes, whilst constant high pressure is everywhere in force in reference to fires; limited cost of the intermittent pipes, 6030–6048.

Advantages of the plan proposed by witness' father for laying down a separate set of fire-mains in London for giving a constant supply on high pressure; cost of 3,000,000 *l.* and upwards involved in this scheme, 6040, 6041. 6049–6055. 6150——Necessity of some fire-engines in London for reaching very lofty buildings, even if there were special mains for working hydrants at constant high pressure, 6049–6052.

Practical training of the Brighton police in fire-extinction duties, 6057. 6092–6098. 6138–6142——Great importance of the police in London aiding the fire brigade, though they could not be so utilised as to dispense with a special brigade of considerable size, 6057–6064. 6096. 6143, 6144——Necessity in the first instance of constant high pressure, in order to efficiently work a system of hydrants, and to bring in the aid of the police, 6063, 6064. 6071, 6072. 6088——Facility in the conveyance and use of leather at Brighton by means of the reels to which it is attached; relative advantage of flaxen hose, 6065-6070.

Particulars relative to the cost per hydrant at Brighton, Manchester, and other places; conclusion as regards London that the cost would be considerably in excess of 10 *l.*, including the taking up and relaying of the pavement, 6073-6086——Belief that in the City the cost will be 20 *l.* per hydrant, including everything, 6084–6086——Slight value attached to small hand pumps for use at the first outbreak of fires, 6089–6092.

Few fires in Brighton, whilst there is no experience of very large fires, as in London; adequate means, however, for coping with large fires, 6099-6107. 6131, 6132——Instances of six hoses playing upon a fire, 6112——Average pressure of about 220 feet, 6113——Opinion that it would be as feasible to provide high-level reservoirs and a constant supply at high pressure in London as it is at Brighton, 6114-6117. 6151, 6152. 6161-6164——Different municipal jurisdiction in Brighton and in Hove and West Brunswick, all the districts being under the Brighton corporation for the purposes of constant supply, 6133, 6134. 6145-6147.

Facility in putting up fittings either for the intermittent or the constant supply at Brighton without multiplication of expense, 6148, 6149——Average of about fifty feet as the height to which jets are thrown, though they may be thrown up to seventy or eighty feet, 6153——Power of enforcing the regulations in reference to constant supply, 6154, 6155——Means of giving a constant service in London, if it be given to a whole district at once, 6156, 6157——Doubt as to the number of fire engines maintained at Manchester and Liverpool, in addition to hydrants, 6158–6160.

Efficiency of Brigade. Large increase since 1866 in the strength of the brigade, whilst it is generally in an improved and efficient condition, *Captain Shaw* 1472-1482——Wise expenditure by increasing the pay of the men, by improving the promotion, and by establishing a superannuation fund, so as to retain them in the service, *ib.* 1479-1486. 1491. 1586.

Satisfactory manner in which fires are coped with by the existing brigade, *Richardson* 5048-5050——More effectual appliances for the protection of insured property (as well

Report, 1876—*continued.*

Efficiency of Brigade—continued.

as uninsured) since the transfer of the brigade to the Metropolitan Board, *Richardson* 5079.

Belief as to the entire efficiency of the London fire brigade, the main thing wanted being a constant supply of water and a system of hydrants, *Berrey* 7417, 7418——Testimony to the efficient working of the brigade, *Henderson* 7784.

Increased efficiency of the brigade since its transfer to the Metropolitan Board, witness finding no fault with the men or with the plant, *Harris* 7978-7989——Want, however, of a numerical increase of the brigade and of a better organisation, *ib.* 7986-7990.

See also *Cost. Engines. Floating Engines. Hours of Labour. Hydrants. Pay. Police. Recruits. Serious Fires. Stations. Strength of the Brigade. Superannuation. Water Supply.*

Engineers (*Fire Brigade*). The second-class engineers have 6 *s.* a day and the first-class 7 *s.*, *Captain Shaw* 255——Support of the claims of the first-class and second-class engineers to an increase of pay, *ib.* 964-977. 989.

Duties of witness in drawing up reports, keeping accounts, making payments, and otherwise assisting the superintendent; three other first-class engineers with similar duties, *Port* 2081-2087——Calculation that the pay and emoluments of witness amount to 3 *l.* 7 *s.* a week, whereas he submits that he should receive as much as a chief inspector of police, who gets 3 *l.* 13 *s.* a week; claim also to some time off duty, *ib.* 2088-2104. 2106-2113——Witness can always count upon a week's leave, *ib.* 2178, 2179.

Explanation that witness' pay as first-class engineer is 2 *l.* 8 *s.* 6 *d.* a week, and that lodgings, coal, and gas may be put about 15 *s.* a week in addition; inadequacy of this remuneration as compared with that of a first-class inspector of police whose time is his own after eight hours' duty, *Duck* 2315-2336. 2347-2350. 2358-2360.

Explanation that in addition to witness' pay of 2 *l.* 2 *s.* a week, as second-class engineer, his lodgings, coals, and gas are worth about 15 *s.*, but that as being in charge of an important station he should in fairness receive the same pay as a first-class engineer, *Bull* 2413-2434——Total of twenty-three or twenty-four stations in charge of second-class engineers, *ib.* 2424-2426. 2449-2452——Particulars as to the course of promotion to the rank of second-class engineer and first-class engineer respectively; promotion of witness after about seven years' service, *ib.* 2426-2441.

Prompt compliance with a report by Captain Shaw in February 1868, recommending the appointment of additional sub-engineers, *De la Hooke* 3293, 3294.

Engines. Practice of not keeping more than one steam fire engine at the same station, *Captain Shaw* 123——Arrival of the steam fire engines at fires after the manual engines; greater facility in getting the latter to work, *ib.* 124-126——Suggested proportion of one steam engine for every four manual engines, *ib.* 227, 228——Particulars as to the number of engines, &c. estimated for by witness in the several districts and the much smaller number provided, *ib.* 374-420.

Requirement of four men to work a manual engine, whilst there should be six men with a steam engine, *Port* 2126-2129——Cost of about 400 *l.* represented by each steam fire engine, whilst a manual costs rather less than 100 *l.*, *De la Hooke* 3230——Full compliance with reports from Captain Shaw in January and August 1866, suggesting the purchase of additional engines, *ib.* 3291, 3292.

Small number of steam engines and manuals at Liverpool; gradual reduction feasible on this score in London, if there were a system of hydrants with a proper pressure, *Richardson* 4950-4954——Value of steam fire engines so long as the water will flow in any adequate quantity from the pipes, *Bramwell* 5904, 5905——Efficiency on the whole of the system of steam fire engines, the instances being rare of deficiency of water supply for working them, *ib.* 5958-5963.

Expediency of some new stations with only one engine at each, rather than of one large station with several engines, *Swanton* 7309-7314.

Disapproval of Mr. Swanton's suggestion, that at some stations there should be only steam engines, witness submitting that there should be a manual engine at every station, *E. Shaw* 8091-8093.

Statement by Captain Shaw in June 1866 as to the insufficiency of the stock of engines and other gear, *App.* 603——Letter from Captain Shaw, dated 8th January 1868, recommending the immediate purchase of six engines from Messrs. Shand and Mason, and of two from Messrs. Merryweather, *ib.* 646——Report by Captain Shaw, dated 4th August 1866, upon the question of purchasing certain hired engines, *ib.* 646, 647.

Report, 1876—*continued.*

Engines—continued.

Return showing the number of steam and of hand engines as proposed by Captain Harris, *App.* 692, 693.

See also *Curricles.* *Floating Engines.* *Hydrants.* *Manual Engines.*

Escapes. See *Fire Escapes.*

Establishment Charges. Explanation relative to the Board's establishment charges in respect of the brigade, these being put at 1,700 *l.* a year, *Freeman* 4152–4155——Information as to the establishment charges under different heads, *Gunn* 5464–5466.

Explosives Act. Elaborate and comprehensive character of the Explosives Act of last Session, *Lushington* 74–76.

Extra Men. Employment of some extra men of the brigade in private establishments, for whom payment is received, *Gunn* 5514–5516.

F.

False Alarms. Total of only ninety false alarms in 1875, *Captain Shaw* 1578, 1579.

Farringdon-street Station. Objection made by witness to the removal of the Farringdon-street station, the position having been a very important one, *Captain Shaw* 608–615.

Re-arrangement of stations by the Board, involving the removal of the station in Farringdon-street, and one or two others, though remonstrances were made by the insurance companies, *De la Hooke* 2903–2908——Formation of a new station in Farringdon-road, about a third of a mile from the former station in Farringdon-street, *ib.* 2908, 2909.

Further reference to the distance between the former station in Farringdon-street and the new one in Farringdon-road; belief as to Captain Shaw having been opposed to the change of site, *De la Hooke* 3487–3490.

Statement in justification of the removal of the station from Farringdon-street to Farringdon-road, *Thompson* 5346, 5347.

Complaint as to the removal of the station from Farringdon-street to Clerkenwell, *Lovell* 6320, 6321. 6324. 6392, 6393——Objection further raised as regards the removal of Farringdon-street station, *ib.* 6640–6644.

Paper, submitted by Mr. Swanton, showing the several fires that have occurred in the neighbourhood of the former station since it was closed, *App.* 686——Illustration of the increase of destructive fires in the case of the removal of the Farringdon-street station, *ib.* 7096–7105.

Fines. System of fines for misconduct, there being no other deduction from pay except for rent; option exercised by witness as to the amount of each fine, *Captain Shaw* 984–987. 990–994—— Reference to the amount derived from fines as still being in the hands of the Board, *ib.* 1745, 1746——Trifling amount represented by the men's fines, these being in diminution of wages, *Gunn* 5567–5571.

Fire Brigade Committee (*Metropolitan Board*). Management of the brigade by a Committee of the Metropolitan Board of Works, comprising about one-third of its members, *Captain Shaw* 357–367——Attendance of witness at every meeting of the Fire Brigade Committee, his advice being constantly given, but the committee not always adopting his recommendations, and acting entirely on their own responsibility, *ib.* 359–367—— Careful economy exercised generally by the Fire Brigade Committee, with due regard to efficiency, *ib.* 1259, 1260.

Meeting of the Fire Brigade Committee once a fortnight (as between 1870 and 1872) for the consideration of all matters relating to the brigade, save questions of discipline and arrangement of the men at stations, which were left entirely to Captain Shaw, *Freeman* 3857–3862——Evidence to the effect that the Board (or the Fire Brigade Committee) do not deem it necessary to consult the insurance offices before the closing or removal of any station, though they are open to receive suggestions and representations on this and other matters, *ib.* 4231–4246.

Explanation that the Fire Brigade Committee act independently of the Board, save to a limited extent; large powers delegated by the Board to the committee, *Richardson* 4745–4747——Sufficiently full powers now possessed by the committee, *ib.* 4747. 4752——Instances of proposals by the committee on financial points not having been adopted by the Board, *ib.* 4748–4751.

Initiative taken by the Fire Brigade Committee at the proper time in such matters as new stations, &c., though so large a financial question as that of a system of hydrants is dealt with by the Works and General Purposes Committee, *Thompson* 5247–5257—— Check to the action of the committee in their recommendation and adoption of improvements owing to the chronic insufficiency of funds, *ib.* 5249–5257——Witness submits, however,

Report, 1876—*continued.*

Fire Brigade Committee (*Metropolitan Board*)—continued.

however, that the Committee have done all that was possible with the funds at their disposal to increase the efficiency of the brigade, *Thompson* 5260–5271.

See also *Cost. Efficiency of the Brigade. Gratuities and Pensions. Insurance Companies*, 7, 8. *Management of the Brigade. Metropolitan Board of Works. Rate. Stations. Superannuation.*

FIRE ESCAPES:

1. *Transfer of the Escapes to the Metropolitan Board.*
2. *Cost.*
3. *Number of Escapes, and Increase from time to time, as recommended by Captain Shaw.*
4. *Central Station, and Instruction Class.*
5. *Hours of Duty of the Men; Opportunities for Rest.*
6. *Question of some Men going on Duty in the Day Time.*
7. *Value of the Escapes as regards the Saving of Life, &c.*
8. *Suggested transfer of the Escapes, with the Fire Brigade, to the Metropolitan Police.*

1. *Transfer of the Escapes to the Metropolitan Board:*

Explanation that in July 1867 the fire escapes were transferred to the Metropolitan Board of Works, *Captain Shaw* 143, 144——Decided objection to the fire escape duties and staff being altogether distinct from the rest of the brigade, *ib.* 706–708——Original establishment of fire escapes by a private society; subsequent transfer to the Metropolitan Board, *Lovell* 6435.

Petition of former fire-escape conductors to the Metropolitan Board in November 1867, praying to be taken into permanent employment, *App.* 606, 607——Report by Captain Shaw, dated 25th November 1867, recommending compliance with the above petition, *ib.* 607.

2. *Cost:*

Statement to the effect that though the Main Drainage Committee advocated increased taxing powers as a condition of taking over the fire escapes, the Board decided upon taking charge of the escapes with the income available for the brigade, *Freeman* 4165–4179——Circumstance of it not having been contemplated in the first instance to support the fire escapes out of the means available for the brigade, *Freeman* 4165–4171. *Thompson* 5273, 5274.

Cost of about 60*l.* for each escape; payment made also for some of the stations or standing places, *Freeman* 4408–4410——Expense incurred also in wages, at the rate of three men for every two escapes, *ib.* 4410–4412.

Probability of the expenditure for fire escapes and life protection being not more than one-sixth of the total expenditure, *Lovell* 6621–6630.

3. *Number of Escapes, and Increase from time to time, as recommended by Captain Shaw:*

There are now 106 fire-escape stations, *Captain Shaw* 110——Provision made from time to time for working the increased number of fire escapes, *ib.* 631–639.

Information as to the distance between the fire-escape stations in the D division, it being very desirable to multiply the stations, and to increase the number of men, *Park* 2066–2080. 2158–2161——Further statement as to the want of additional fire escapes, so that in populous districts they should not be more than half a mile apart, *ib.* 2212–2217. 2252–2257.

Particulars relative to the additional fire-escape stations established between February 1870 and May 1872, together with the number of additional men appointed, *De la Hooke* 3131–3180——New stations established at Deptford and at the Broadway, as recommended by Captain Shaw, in April 1868, *ib.* 3235–3238——Extent to which the Board carried out certain recommendations of Captain Shaw in different reports in 1868, for an increase of fire escapes and of watch boxes, *ib.* 3295, 3296——Compliance with a recommendation by Captain Shaw, in October 1871, for the establishment of six new stations, *ib.* 3301.

Recommendation by Captain Shaw, under date 14th February 1870, for the formation of twenty-six new fire-escape stations, the annual cost being about 2,500*l.*, *App.* 619——Report by Captain Shaw, dated 13th May 1872, urging the establishment of six new stations, *ib.* 624——Letter from Captain Shaw, dated 16th March 1868, recommending the purchase of two fire escapes of an improved description, *ib.* 649——Report from Captain Shaw, under date 21st May 1868, recommending the annual purchase of ten new machines in 1868, 1869, and 1870, *ib.*——Report, dated 23rd October 1871, as to the want of new stations at certain points, six in number, *ib.* 650.

Number of fire-escapes and of stations on 1st January in each of the years 1868 to 1876; increase of escapes from eighty-nine to 132, and of stations from eighty-five to 106, *App.* 639.

Report, 1876—*continued.*

FIRE ESCAPES—continued.

4. *Central Station, and Instruction Class:*

Steps being taken to provide new accommodation for the fire-escapes, and for the instruction of the men therein, in view of removal from Grand Junction Wharf, now used for these purposes, *De la Hooke* 3268–3270——Authority given to Captain Shaw in May 1870, to rent a place for the training of fire-escape men, *ib.* 3299–3301.

Report by Captain Shaw in May 1870, as to the want of a place for the instruction of fire-escape men, *App.* 652

Report by Captain Shaw, under date 7th February 1876, as to the building accommodation required for the fire-escapes, *App.* 627.

5. *Hours of Duty of the Men; Opportunities for Rest:*

Explanation that the fire-escapes are attached in every case to the engine stations, and that there is one man on duty with every escape throughout the night, *Captain Shaw* 145. 154–158——Necessity of frequently sending fire-escape men out again after they have been on duty all night, *ib.* 704, 705——Advantage of two men for each escape, though this is not absolutely necessary, *ib.* 1042–1044——Reduced hours of duty with the fire-escapes during the four months, from May to August, *ib.* 1143——Opportunities of men with the escapes for lying down and getting rest, *ib.* 1915–1919.

Statement as to the men in charge of the escapes being able to get sleep in the watch boxes, *Wiltmer* 2792–2795——Duty of witness for three nights weekly, with an escape; difficulty as to getting sleep comfortably in the boxes, *Fitzmaurice* 2816–2820. 2827–2830——Expediency of arrangements, whereby fire-escape men after a night's duty may be allowed to go to bed; necessity, however, of the men being on the spot, ready to start for any serious fire at a moment's notice, *Thompson* 5197–5200.

6. *Question of some Men going on Duty in the Day Time:*

Much less necessity for the attendance of fire-escapes during the day than night, *Port* 2265–2271——Advantage if some fire-escape men were on duty during the day, *Swanton* 7152, 7153——Waste of strength in keeping the fire-escape men on duty all day, *Harris* 8045.

7. *Value of the Escapes as regards the Saving of Life, &c.:*

Prompt arrival generally of the escapes at fires, *Captain Shaw* 159–161——Particulars as to the loss of life by fire in London, and as to the number of lives saved by the brigade and the fire-escapes; conclusion as to the expediency of increasing the number of escapes to 200, *ib.* 1031–1041.

Value attached to the fire-escapes, though hitherto they may not have saved many lives, *Duck* 2370–2376——Duty of witness to attend to a fire-escape every alternate night; he has never had any opportunity of saving life, *Wiltmer* 2780–2784——Loss of eight lives at a fire in Lambeth, after the fire-escape had come off duty for the night, *ib.* 2785–2791——Value attached to the fire-escapes, though hitherto witness has not been instrumental in saving any life, *Fitzmaurice* 2825, 2826. 2831–2834——Value of the escapes, not only for the saving of life, but for facilitating the use of hose, &c., *Freeman* 4405–4407. 4418.

8. *Suggested Transfer of the Escapes, with the Fire Brigade, to the Metropolitan Police:*

Approval of the fire-escapes being under the brigade branch of the police, it not being necessary to instruct all the police in their management, *Harris* 8013–8017.

Firemen. *See* the *Headings generally throughout the Index.*

Fire-plugs. Authority of the brigade to deal with the fire-plugs and hydrants of the water companies; explanation hereon as to the obligation upon the companies, and as to the powers in the Board under the Fire Brigade Act in regard to the provision of fire-plugs, *Lushington* 22–42.

Circumstance of the position of the fire-plugs not being now properly marked in all cases, *Captain Shaw* 1098–1103——Views of witness in 1867, and at the present time, as to the unfitness of the fire-plugs as a mechanical arrangement for getting access to water for fires, *ib.* 1543–1550.

Explanation as to the Metropolitan Board not having considered it necessary to put up fire-plug indicators or tablets, *De la Hooke* 3482–3486——Facility in using plugs in London, but not if there were high pressure, *Sir J. W. Bazalgette* 5793–5795.

Belief as to the satisfactory use of fire-plugs with constantly charged mains, *Bramwell* 5828——Statement showing that in Liverpool fire-plugs are largely used upon mains under constant supply, *ib.* 5830–5833.

Better supply of water by means of plugs than of hydrants, if the pressure is very low, *Easton* 6016, 6017——Waste of half the water when plugs are started for the service of the engines, *Swanton* 7021–7023. 7026.

Fire-plugs—continued.

Memorandum by the superintending architect of the Metropolitan Board, dated 29th June 1866, upon the subject of the fire-plugs in the metropolis; amended arrangements suggested, *App.* 663–665.

Sketch showing the present arrangements (1866) of the mains, services, stopcocks, and fire-plugs, *App.* 664.

See also *Hydrants*, 6. *Turncocks.*

Fitzmaurice, Duncan. (Analysis of his Evidence.)—Service of witness for two and a-half years as a fourth-class fireman, he having been previously in the merchant service, 2796–2798——Effect of a satisfactory superannuation scheme to induce men to remain in the brigade, 2799–2801——Complaint by the men as to the excessive hours of duty; illustration in witness' case, he having only one night out of five on which he can undress and go to bed, 2802–2811. 2821–2824.

Satisfaction given by the wages, though a re-arrangement of the classes is required, 2812–2815——Duty of witness for three nights weekly with an escape; difficulty as to getting sleep comfortably in the boxes, 2816–2820. 2827–2830——Value attached to the fire-escapes, though hitherto witness has not been instrumental in saving any life, 2825, 2826. 2831–2834.

Floating Engines (River Services):

1. *Services rendered by the Four Floats now stationed in the River; want of an increased Number.*
2. *Suggestions for the Provision of several small Floats; Delay in the matter on the part of the Metropolitan Board.*
3. *Saving of Fuel by the use of small Floats.*
4. *Staff of Men, and Hours of Duty.*
5. *Repairs.*
6. *Arrangements for conveying Hose on Shore.*

1. *Services rendered by the Four Floats now stationed in the River; want of an increased Number.*

Advantage of increasing the number of river engines from four to eight or twelve, *Captain Shaw* 230——Length of about twenty-two and a-half miles of river protected by four engines; witness having already proposed an addition of four engines, *ib.* 1155–1159——Very heavy work occasionally for the river engines, *ib.* 1160——Decided objection to dispensing with any of the large floating engines, *ib.* 1165, 1166. 1442–1444——Prompt action of the floating engines on arrival at river-side fires, *ib.* 1603–1607. 1681, 1682. 1684——Means of hastening the arrival of the engines at fires near the river, *ib.* 1683–1685.

Occupation of from fifteen to twenty minutes in getting the Rotherhithe float under weigh when called to a fire, *Kelly* 2460, 2461. 2533, 2534——Sufficient depth of water available for bringing the float close enough to river-side fires, *ib.* 2462, 2463——Propulsion of the float by the same boiler that works the pumps, *ib.* 2551–2553——Particulars as to the distances between the stations of the several floats, *ib.* 2559–2574——Further statement as to the time required in getting the floats under weigh, and in arriving at fires, *ib.* 2579–2587.

Difficulty in turning large floats in the tideway and in bringing them close to the land, *Swanton* 7063. 7065–7069. 7073——Comment on the purchase of four floats, which have been comparatively worthless, *ib.* 7070.

Inaccuracy of the statement by Mr. Swanton as to the Metropolitan Board having purchased four floats, *Captain Shaw* 8089–8091——Only two floats were purchased, one of which was a small one, *ib.* 8090.

2. *Suggestions for the Provision of several small Floats; Delay in the matter on the part of the Metropolitan Board:*

Expediency of new floats being of a smaller size than the present ones, *Captain Shaw* 1142–1144. 1165, 1166. 1686–1688——Sufficiency of a speed of eight or nine miles an hour, *ib.* 1167——Long period for which the question of small floats has been before the Metropolitan Boards; plans are now drawn up, *ib.* 1444–1450.

Advice given by Captain Shaw in December 1871 against the purchase of small floating engines on the plan proposed by the insurance companies; that is, as drawing more water than would justify the outlay, *De la Hooke* 2910–2913. 2920–2924——Report subsequently made by Captain Shaw in July 1874 in favour of the provision of some steam launches for taking the small rafts quickly and closely to river-side fires; careful attention given by the Board to this proposal, though nothing definite has yet been done, *ib.* 2914–2919. 2924, 2925.

Explanation with further reference to the non-provision of a particular kind of float recommended by the insurance companies; view of Captain Shaw as to the advantage of floats

Report, 1876—*continued.*

FLOATING ENGINES (RIVER SERVICES)—continued.

2. *Suggestions for the Provision of several small Floats; Delay, &c.*—continued.

floats drawing only six or eight inches of water, *De la Hooke* 3435–3437——Further statement as to the cause of the delay in adopting Captain Shaw's suggestions for a new kind of float; decision shortly expected on the subject, *ib.* 3442–3445.

Steps taken with a view to the provision of some small floating engines for river service; valuable suggestion hereon by Captain Shaw for the use of a flat-bottomed barge, with an engine on it, to be drawn by a tug, *Freeman* 4224, 4225——Fair protection now afforded on the river, though it is desirable to have some small floats; saving thereby on the score of fuel, *ib.* 4226–4229——Discussion between the Board and representatives of the insurance offices upon the subject of small river floats, *Richardson* 5022, 5023.

Comments upon the unsatisfactory reasons given by the Metropolitan Board for not complying with applications made by the insurance companies in 1871 and 1872 for the use of some small steam floats, *Lovell* 6331–6342. 6423, 6424——Advantage of some small floats, drawing very little water, as they could arrive at fires much more quickly than the present large floats, *ib.* 6446——Want of funds to which the non-provision of small floats has been attributed by the Metropolitan Board, *ib.* 6447.

Further statement in regard to the refusal by the Metropolitan Board to provide some small steam floats; on this point witness withdraws some comments made upon the Board in his former examination, *Lovell* 6596–6607. 6614–6619——Non-adoption of the representations made on the subject of steam floats, *Tomkinson* 6710, 6711.

Advocacy of a supply of small steam floats, as urged upon the Metropolitan Board by the insurance companies; estimate of 2,000 *l.* as the cost of each float, including fittings, and not drawing more than fourteen or sixteen inches of water, *Swanton* 7065–7072——Suggestion that there be eight steam floats equally distributed between Westminster Bridge and Woolwich, and that they be of a smaller and more manageable kind than those now in use, *ib.* 7187–7193——Promptitude with which the proposed vessels could arrive at fires, whilst at present there is much delay, *ib.* 7191–7193——Great advantage of having floats drawing only sixteen inches of water, efficient engines to be carried by such vessels, *ib.* 7282–7292.

Report by Captain Shaw, dated 16th December 1871, with reference to certain representations by the London Salvage Corps on the subject of steam floats, *App.* 640, 641.

Correspondence between the Salvage Corps and the Metropolitan Board in 1871–72 upon the question of a supply of small floating engines, *App.* 681, 682. 684.

Proposal by Captain Shaw in report of 11th July 1874, for providing twelve fire-engines, six rafts, and four tug-boats for river-side service; total cost of about 8,000 *l.*, *App.* 625, 626.

3. *Saving of Fuel by the use of small Floats:*

Large saving of fuel estimated by Captain Shaw by the use of small tug-boats as proposed by him, *De la Hooke* 3438–3441.

Report by Captain Shaw, under date 11th July 1874, containing suggestions for reducing the heavy cost of the coal and coke consumed in keeping up steam constantly in the two largest floats, *App.* 625, 626.

4. *Staff of Men, and Hours of Duty:*

Varying number of men with each river engine, according to the size, *Captain Shaw* 1154.

Total of six men and one officer attached to the float off Rotherhithe, *Kelly* 2454–2459——Excessively long hours of duty, *ib.* 2472–2492. 2493–2495. 2513–2518. 2539–2547——Experience being gained by men attached to the floats, so that they may take charge of a land steamer, *ib.* 2528–2530——Explanation that the men who serve on the float live on shore close by, and take their turn on the float, the fires being kept banked, *ib.* 2554–2558. 2575–2583——Liability of the men attached to the float at Rotherhithe to be called off for service at the land station adjacent, *ib.* 2595–2598.

Sufficiency of three men for each small float, *Swanton* 7190.

5. *Repairs:*

Time occupied in repairing the floats; temporary arrangement made whilst one float was a very long time under repair, *Captain Shaw* 1161–1164.

6. *Arrangements for conveying Hose on Shore:*

Partial compliance with suggestions in March 1873 for the adoption of certain arrangements for conveying hose on shore from the floating engines at low water, *De la Hooke* 3301–3303.

Report by Captain Shaw, under date 20th March 1873, suggesting the adoption of Rogers' patent apparatus for effecting communication between the engines and the shore, over large expanses of mud, *App.* 651.

See also *King and Queen Granary.*

Flynn, ——. Comment upon the rejection of the superannuation scheme of the Metropolitan Board by a first-class engineer named Flynn, who has been in the service thirty-eight years, and is over sixty-fours years of age; liberal annuity upon which he might at once retire, as compared with the sum paid by him to the savings fund, *Richardson* 4501–4503.

Ford, Widow. Decision by the Board at the time of the transfer of the brigade, that the widows of men killed on duty should receive a pension; departure from this undertaking in the case of a woman named Ford, for whom the public had subscribed a very large sum. *De la Hooke* 3005–3011 ——Willingness of the Board to have awarded the widow Ford a pension for life, but for the large sum subscribed for her by the public, *ib.* 3456, 3457.

Further explanations in connection with the action of the Fire Brigade Committee in the case of the widow of Ford (who, in saving five lives from fire, lost his own), *De la Hooke* 3702–3709 ——Allowance of 1 *l.* a week to Ford's widow for a year, when it was stopped on account of the income derived by her from public contributions, *ib.* 3704–3709.

Foreign Countries. Acquaintance of witness with the fire extinction arrangements in the chief cities on the Continent and in America, as well as in England, but without seeing in those arrangements anything which he can recommend for adoption in London, *Captain Shaw* 1059–1074.

Fraudulent Fires. Belief that very few fires are really fraudulent, though fraudulent claims may be very numerous, *Captain Shaw* 1116——Practice of witness not to return any fires under the head of "incendiary," unless they have been so proved; liability of him or his men to be called as witnesses, *ib.* 1117–1123 ——Decided unwillingness of the insurance companies to prosecute for arson, *ib.* 1184.

Difficulty in ascertaining the number of fraudulent fires; explanation as to the reluctance of the companies to take legal proceedings in these cases, *Lovell* 6411–6417 —— Assistance given by the Fire Brigade Committee to the insurance offices, with a view to the discovery of incendiary fires, *ib.* 6632–6634.

Freeman, Robert. (Analysis of his Evidence.)—Was chairman of the Fire Brigade Committee of the Metropolitan Board, from June 1870 to June 1872, having previously been chairman of the Main Drainage Committee, under which the fire brigade was first placed at the time of the transfer to the Board, 3854–3856.

Meeting of the Fire Brigade Committee once a fortnight, between 1870 and 1872, for the consideration of all matters relating to the brigade, save questions of discipline and arrangement of the men at stations, which were left entirely to Captain Shaw, 3857–3862 ——Support of the brigade by means of a halfpenny rate, a government contribution of 10,000 *l.*, and a contribution from the insurance companies, 3863–3865. 3879——Increasing produce of the halfpenny rate, the amount in 1876 being estimated at 48,148 *l.*, 3865–3867. 3870, 3871.

Distinct capital account, the amount first authorised having been limited to 40,000 *l.*; increased capital powers obtained in 1869, the expenditure under which reaches about 115,000 *l.*, 3867–3869. 3872–3875——Further borrowing powers obtained to the extent of 15,000 *l.*, about half of which has been expended, 3875–3877——Explanation that no part of the interest on the capital expenditure is paid out of the rate, 3877——Expenditure of the capital in providing new stations and engines, &c., 3880, 3881.

Increased pay given to the men, who are satisfied in this respect, 3882–3884—— Expediency of a removal of the restriction by which the Board cannot levy more than a halfpenny rate; increased efficiency if there were increased means at the disposal of the Board, 3885–3887. 3892–3894. 3928–3935——Compliance with Captain Shaw's suggestions for an increase of staff and of stations, so far as the means of the Board have permitted, 3885, 3886. 3888–3890. 3910–3913 ——Great extravagance involved in a proposition by Captain Shaw, for a force of 900 men, 3891. 3913. 3920. 3939. 4102. 4186–4189.

Complaint as to the unfair and exaggerated character of certain evidence of Captain Shaw, upon the question of overwork of the men; denial that their duties, though irksome and monotonous, are breaking down their health, 3894–3910——Responsibility resting with Captain Shaw in the matter of the long continuous hours of duty in individual cases, without opportunities for proper rest or for sleep; facilities which might be afforded on the latter score if Captain Shaw's discipline were not so exacting, and if he did not require so much polishing and cleaning of the engines, &c., 3895–3902. 3905. 4096–4099 ——Until stated by Captain Shaw in evidence, witness was not aware of men being on duty for 108 and 120 consecutive hours, 3895, 3896.

Particulars relative to the staff and hours of duty at the Paddington Station of the brigade, as showing that there is no actual overwork, and that there are facilities for rest if properly utilised by Captain Shaw, 3897–3906. 4078–4099 ——Gradual diminution in the proportion of serious fires, witness submitting that a moderate increase of the

brigade

Report, 1876—*continued.*

Freeman, Robert. (Analysis of his Evidence)—*continued.*

brigade from year to year is all that is required, 3914——Expediency of an increase of staff in view of the contingency of a very large fire, though witness considers so large an increase as 200 men is not required at present, 3915–3919.

Exception taken to Captain Shaw's conclusion, that a very large brigade would have the effect of greatly reducing the insurance premiums paid by the public, 3920, 3921——Doubt whether the saving by reduction of fires would pay for the increased cost of a very large increase in the number of stations and engines, as well as of men, 3920. 3922, 3923——Result of inquiry by witness, as regards the fire at the Pantechnicon, that there was no ground for complaint as to the time of arrival of the engines, 3923–3927. 4121–4124.

Denial that there has been a dereliction of duty on the part of the Metropolitan Board in not pressing for further taxing powers, in order to increase the strength of the brigade, though the Board would be glad to get rid of the limit of the halfpenny-rate, 3928–3938——General efficiency of the present brigade, as gradually strengthened from time to time, though Captain Shaw may not be satisfied till it has crept up to 900 men, 3937–3939.

Examination upon the question of hydrants to the effect that on account of the insufficient and unreliable pressure in the mains, it is not expedient to incur the expense of laying them down extensively in the metropolis, 3940–3980——Successful operation of hydrants at Manchester, there being a satisfactory pressure by gravitation, and the whole water supply being under municipal control, 3945, 3946. 3960, 3961——Relative advantage of plugs and of hydrants for supplying water for the use of engines, 3947–3951. 3967.

Circumstance of Captain Shaw not having represented to the Fire Brigade Committee that hydrants would be much better than plugs, unless there were a constant and reliable pressure, 3952–3954——Admission that to a certain extent hydrants would be a gain, 3955–3958. 3961——Authority of Sir Joseph Bazalgette and others, upon which the Board have decided that they would not be justified in applying a costly system of hydrants under the present conditions as to pressure, 3959–3967——Inconclusive character of certain experiments with hydrants upon the mains of the Kent Water Company, 3968–3980.

Encouragement by the Fire Brigade Committee of suggestions for utilising the police in the work of fire extinction; unwillingness of Captain Shaw to work with the police in this direction, 3981–3983. 3990——Valuable use which may be made of the stand-points of the police in connection with local fires, 3984. 3987–3989. 4120——Disapproval of Captain Shaw's suggestion for providing some small contract stations, 3985, 3986——Objection by Captain Shaw to utilising the volunteer fire-engines, 3990. 4120.

Considerable difference of opinion at the Metropolitan Board upon the question of a superannuation scheme, witness being one of those in favour of retiring pensions, 3991, 3992——Great exaggeration and inaccuracy in a statement by Captain Shaw, that 600 men had left the brigade through the absence of a superannuation fund, whose trained services represented a cost or loss of 60,000 *l.*, 3993–4000——Tendency to increased resignations through sailors, exclusively, being selected by Captain Shaw, 3998. 4000——Numerous resignations in order to obtain better remuneration elsewhere, 4000–4002. 4208.

Approval of a scheme of superannuation upon the basis of that in the police, 4003–4005. 4010. 4117——Difficulty raised by the men as to the limit of service being fixed at the age of sixty; 4003. 4009, 4010——Hasty and inconsiderate rejection of the Board's scheme by the men; willingness of the former to have conceded certain points, 4006–4008.

Anxiety of the Board to provide lodging for the men at the stations, this being difficult on account of their families, 4011–4015——Advantage of the site of the Watling-street station, save that the approaches are too confined, 4016–4018——Estimate of from 10,000 *l.* to 12,000 *l.* to be produced by a sale of the station, 4018——Difficulty in securing an eligible site on the Thames Embankment, or elsewhere, for a central station, on account of the great cost involved, 4018, 4019. 4024–4028——Exceptions taken to the employment of brigade men in the workshops for the execution of repairs, though Captain Shaw has been allowed to have his own way in the matter, 4020–4023.

Approval of some reasonable concession as to promotion, though witness objects to Captain Shaw's proposal on the subject as involving too much expense, 4029–4031——Expediency of increased facilities and appliances for fire extinction so long as the expenditure meets with an adequate return, 4032–4037. 4102–4104.

Examination with further reference to the force required to cope with a great fire, or with two great fires at the same time, and the effect as regard the number of men left for the protection of the rest of the metropolis; approval of a reasonable increase of men in view of this and other considerations, 4038–4059——Unduly high pay if after six years' service each fireman were to reach the first-class and to get 5 *s.* a day, besides his clothing, lodging, &c., 4060–4077. 4103——Small payment made by the first-class towards the cost of their lodgings when not provided for them in the stations, 4064–4072

 ——Facility

Report, 1876—*continued.*

Freeman, Robert. (Analysis of his Evidence)—*continued.*

—— Facility of arrangements whereby the men might go to church on Sunday, 4078—— Opportunity of the men for getting sleep without taking their clothes off, though liable to be woke by the telegraph bell, 4087-4095.

Further statement as to the men having hastily rejected the Board's superannuation scheme without really understanding it; influence used in order to induce them to reject it, 4105-4116——Comment upon certain evidence of Captain Shaw favourable to the police being more directly utilised, as he has always protested against divided responsibility, 4118-4120.

Conclusion further expressed that any further reduction to be made in the number of serious fires by an increase of the brigade would not have the effect of reducing insurance premiums, 4123-4129——Statement that the insurance offices like to have some fires, as inducing the public to insure, 4128, 4129. 4143——Slight margin for further reduction of destructive fires as compared with the heavy cost of a largely increased brigade, 4130-4132.

Objection to a transfer of the brigade to the metropolitan police, the present management being efficient and economical, 4133, 4134. 4151, 4152——Grounds for concluding that the Government and the insurance companies, though contributing to the cost, should not be represented in the management, 4135-4150——Explanation relative to the Board's establishment charges in respect of the brigade, these being put at 1,700 *l.* a year, 4152-4155——Further annual charge of about 1,700 *l.* for incidentals, such as books, stationery, &c., 4156-4160.

Expenditure in each year of the full amount available for the brigade; expected surplus of from 5,000 *l.* to 6,000 *l.* on the current year, 4161-4164. 4182——Circumstance of it not having been contemplated in the first instance to support the fire-escapes out of the means available for the brigade, 4165-4171——Statement to the effect that though the Main Drainage Committee advocated increased taxing powers as a condition of taking over the fire-escapes the Board decided upon taking charge of the escapes with the income available for the brigade, 4168-4179.

Data for the conclusion that an immediate addition of 200 men is more than is required, and that 100 would probably suffice, including the increase entailed by a new central station, 4180-4189——Dissent from Captain Shaw's estimate of the number of men required for the fire-escapes; only one man remains with the escape through the night, 4190-4196—— Hope expressed that Government and the insurance companies will voluntarily increase their contributions, it being expedient in any case to remove the present rating limit, 4197-4201.

Witness denies that his views are diametrically opposed to those of Captain Shaw, and that he has "stigmatised" the evidence of the latter, 4202-4205 ——Witness repeats, however, that Captain Shaw has never been found willing to act cordially with the police, and that his statement as to the great loss entailed by resignations through the want of a superannuation allowance is a very extravagant one, 4205. 4208. 4223.

Belief that the resignations are partly due to the strictness of the discipline and the monotony of the service, especially for men who have led a seafaring life, 4206-4209. 4223——Facility in obtaining eligible recruits if Captain Shaw did not stipulate for sailors exclusively, 4210-4214.

Prospect of an increase of stations, there being an available surplus this year of from 5,000 *l.* to 6,000 *l.* for the purpose, 4215, 4216——Preference for a site on the north of the Thames for a central station, 4217——Explanation as to the Board not interfering with Captain Shaw on the score of discipline, though witness submits that this may be so modified as to admit of the men's obtaining more rest, 4218-4222——Various reasons why men leave the force, it being perfectly fallacious to conclude that they all leave through want of a superannuation scheme, 4223.

Steps taken with a view to the provision of some small floating-engines for river service; valuable suggestion hereon by Captain Shaw for the use of a flat-bottomed barge, with an engine on it, to be drawn by a tug, 4224, 4225——Fair protection now afforded on the river, though it is desirable to have some small floats; saving thereby on the score of fuel, 4226-4229——Large provision made by the docks for their own protection, 4227. 4241.

Opinion that the duties of a fire-brigade man are infinitely preferable to those of a policeman, 4230——Evidence to the effect that the Board (or the fire brigade committee) do not deem it necessary to consult the insurance offices before the closing or removal of any station, though they are open to receive suggestions and representations on this and other matters, 4231-4246——Failure of an application to the dock company for a site for a new station in lieu of that in Wellclose-square, 4241. 4256.

Further statement as to hydrants being of little use without proper pressure, and as to Captain Shaw having always held this opinion, 4247——Steps being taken by the City authorities in laying down hydrants, 4248-4250——Good pressure given by the New River Company in the City, so that hydrants may be usefully attached to the mains; limited area, moreover, as compared with the rest of the metropolis, 4251-4255.

[Second

Report, 1876—*continued.*

Freeman, Robert. (Analysis of his Evidence)—*continued.*

[Second Examination.] Explanation that in 1874 and 1875 there was a deficit of income to meet expenditure, and that the surplus of from 5,000 *l.* to 6,000 *l.*, in 1876, will be required to balance such deficiency and to cover the increase of expenditure, 4257-4273——Further increase of expenditure now being incurred, so that the income in 1877 will be absorbed, irrespectively of increase of staff in the coming year, 4274-4278.

Painful surprise to witness in the matter of Captain Shaw's evidence, and of other evidence, as to the exceedingly long hours of duty of the men, 4279-4285. 4338——Circumstance of Captain Shaw having offered to send twelve engines and 100 men to Paris, upon the occasion of the great fire there in 1871; 4279-4281. 4450——Exception taken to a statement in a petition from the men, in February 1874, that their health was injured by overwork, 4282, 4283.

Admission as to the long hours of duty being irksome; denial, however, that there is actual hard work, or that health is injured, 4283, 4284——Further statement as to Captain Shaw having had it in his power to give more rest and time for sleep by a re-arrangement of the duty of cleaning the engines, &c., 4285, 4286——Contemplated addition of fifty men, or one for each station, if the limit as to rating be removed, 4287-4289.

Facility of arranging for the attendance of men at church by a modification of the discipline now in force, 4290-4294——Conclusion as to the men generally being satisfied with their pay, provided the superannuation question be satisfactorily settled, 4295-4301——Anxiety of the Board to give prompt effect to a superannuation scheme; prospect of a speedy settlement, 4302-4304——Opinion that the scheme in the metropolitan police is a very fair one, 4305.

Doubt as to there being any special claim upon the insurance companies for an increased rate of contribution, 4306-4308——Gradual increase in the contribution from the companies as the amount of insured property increases, 4307——Expediency of each case of accident in the brigade being dealt with on its own merits at the discretion of the Board, 4309-4311——Importance attached to an increase of small stations, with three or four men at each; great improbability of a second call at the same small station when temporarily closed after the first call, 4312-4319——Advantage if the wives of men in charge of small stations were taught the use of the telegraph, 4317-4320.

Three-fold increase in the plant and staff of the brigade since its transfer to the Metropolitan Board in 1866; 4321-4325——Dissent from a certain statement by Captain Shaw that more money should have been spent upon the staff and engines and less upon new stations, 4326-4328——Death or dismissal of 100 men out of the 600 reported by Captain Shaw to have left through discontent with the service, 4329-4331.

Contemplated addition of about twelve stations and twelve fire-escape stations, in which case there should be an addition of about 120 men, including one extra man for each existing station, 4332-4334. 4383-4393——Excess of the income of the Board in order to increase the number of stations and fire-escapes, 4335-4337——Ready acceptance of charge of the fire brigade by the Board at the request of the Home Office; probable reason why the charge was not entrusted to the police, 4339-4345. 4357——Reluctance of the Board to solicit powers of increased taxation for the brigade, though the tax may not be an unpopular one, 4346-4351.

Consideration of certain evidence of Mr. Easton, in 1862, as to the great advantage of hydrants, 4352, 4353. 4444-4447——Further admission as to the value of hydrants in lieu of fire-plugs, if the supply and pressure of water be sufficient, 4352-4356——Great benefit of the brigade to the insurance offices, so that they should willingly contribute to the cost, 4358-4364——Satisfactory representation of the vestries upon the question of new stations, 4365, 4366——Estimate that a three-farthings rate would suffice to provide the required increase of stations and of staff, 4367-4369.

Explanation with further reference to the reluctance of the Board to interfere with Captain Shaw in matters of discipline; full control, however, in matters involving expenditure, 4370-4372. 4394-4398——Saving of several minutes in turning out to fires if the men all lived in the stations, 4373, 4374——Advantage of the central station including a drill ground, 4375, 4376——Conclusion further expressed as to the impolicy of laying down hydrants with the pressure now obtainable, 4377-4381.

Explanation that witness finds no fault with the water companies as to the pressure, &c.; they are doing all that can be fairly expected of them, 4382——Opinion as to the expediency of the brigade remaining under the Metropolitan Board instead of being transferred to the police; taxation and representation should go together, 4399, 4400. 4436-4443——Monotonous rather than exhaustive duties of the men; number of calls to fires adverted to hereon, 4401-4404.

Value attached to fire-escapes, not only for the saving of life but for facilitating the use of hose, &c., 4405-4407. 4418——Cost of about 60 *l.* for each escape; payment made also for some of the stations or standing-places, 4408-4410——Expense incurred also in wages, at the rate of three men for every two escapes, 4410-4412.

Freeman, Robert. Analysis of his Evidence)—*continued.*

Belief that for the present number of stations an increase of 200 men is far more than is required, and that an addition of one man to each station would admit of satisfactory facilities for rest and leave, 4413-4417. 4419——Exceptional conditions in the metropolis as regards the question of contribution by the insurance companies towards the fire brigade, 4420-4427——Further explanation as to the Board not having taken active steps to obtain from Government an increase of rating powers, in order to increase the efficiency of the brigade, 4428-4435.

Due weight always attached by the fire brigade committee to Captain Shaw's applications for an increase of force, though his proposal for a brigade of 900 men is considered a most extravagant scheme, 4448-4451——Explanation that witness has not understood Captain Shaw as preferring an addition of 200 men, with increased utilization of the police, to the project for a force of 900 men, 4452, 4453.

Funeral Expenses. Practice of giving 5 *l.* for the funeral expenses of each man dying while in the service of the brigade; witness was not aware that 10 *l.* was formerly given, *De la Hooke* 3727-3733——Failure of an attempt in the Fire Brigade Committee to increase the funeral expenses allowance from 5 *l.* to 7 *l.* 10 *s.*; previous report by Captain Shaw as to the insufficiency of the former amount, *ib.* 3784-3786.

G.

Gibbs, John. Gratuity of 10 *l.* given to John Gibbs, discharged through ill health after three years' service, *Captain Shaw* 779.

Government Contribution. Treasury contribution of 10,000 *l.* a-year towards the expenses of the brigade, *Lushington* 9——Absence of increase in the Government contribution though the value of Government buildings has increased, *Richardson* 4970-4972——Increasing amount of Government property protected by the brigade; extra payment made for the Post Office, *Gunn* 5512, 5513.

Grand Junction Waterworks Company. Explanations and suggestions on the part of the company in 1866 upon the question of the water supply in reference to fires; objections to a constant supply at high pressure throughout the whole district, *App.* 667, 668.

Gratuities and Pensions. Very liberal practice formerly as regards gratuities and pensions though there was no regular superannuation scheme, *Captain Shaw* 738-743——Inexpediency of its resting with a committee of the men to decide the amount to be given in gratuities, out of funds contributed entirely by themselves, *ib.* 1494-1501——Concurrence in Captain Shaw's evidence on the subject of gratuities, *Hamlyn* 1822-1824.

Explanation that the gratuities and pensions are not calculated on any definite scale, each case being dealt with on its own merits, *De la Hooke* 3012-3024——Instances of gratuities by returning the contributions previously paid to the savings fund, with something added, *ib.* 3014-3020——Pension given in the case of all men who have served more than eleven years, and have become incapacitated in the service, *ib.* 3398——Careful consideration given in the matter of gratuities, Captain Shaw being always present on such occasions, *ib.* 3399-3403.

Instances of apparent inequality in the amount of gratuity with reference to the length of service, *De la Hooke* 3764-3773——Belief that it is not the practice in any branch of the public service to give gratuities to relatives, who are not dependents, of deceased public servants, *ib.* 3794, 3795.

Return showing the cases of men who have broken down in the service of the brigade, with the amounts awarded to them by the Metropolitan Board of Works, *App.* 629.

Return showing the cases of men discharged on account of infirmity, the length of service, and the pension, or gratuity, in each case, *App.* 630.

See also *Accidents. Attwood, Charles. Dayman, W. H. Ford, Widow. Gibbs, John. Guernsey, ——. Martin, Stephen. Perkins, Joseph. Radford, Charles. Ray, George. Smart, ——. Superannuation. Taylor, John. Widows and Children.*

Guernsey, —. Particulars relative to the case of a man named Guernsey killed at the fire at the City Flour Mills in November 1872; explanation as to no compensation having been awarded to Guernsey's father, inasmuch as it was ascertained that he was not dependent on his son, *De la Hooke* 3710-3726. 3794-3802. 3850-3853——Payment in Guernsey's case of 1 *l.* 18 *s.* 6 *d.* in excess of the usual amount allowed for funeral expenses, *ib.* 3713——Recommendations by the coroner's jury that some award be made to the relatives of Guernsey; application also by Guernsey's father, but without success, *ib.* 3714-3722. 3794-3802.

Gunn, Arthur. (Analysis of his Evidence.)—Is Accountant to the Metropolitan Board of Works, 5445——Total of 40,000 *l.* as the authorised capital in respect of the Fire Brigade at the time of its transfer to the Board, 5446. 5523-5525——Particulars relative to the annual income and expenditure since 1866, the payments being as a rule in excess of the receipts.

Report, 1876—*continued.*

Gunn, Arthur. (Analysis of his Evidence)—*continued.*

receipts, 5447 *et seq.*——Practice of carrying forward the deficit balance from one year to another; deficiency of 3,529 *l.* up to 31st December 1875; 5449, 5450——Increasing income from the half-penny rate, there being a fresh assessment every five years; produce of 48,000 *l.* in 1876, as against 38,000 *l.* in 1871; 5451, 5452. 5519–5522.

Increasing difficulty in recent years to keep the expenditure down to the level of the income, 5459–5463. 5516–5518——Information as to the establishment charges made in respect of the fire brigade, 5464–5466——Gradual increase of the charge for salaries and wages from 17,509 *l.* in 1866 to 37,710 *l.* in 1875; 5468, 5469——Steady increase in the charge for horse hire from 3,748 *l.* in 1866 to 8,492 *l.* in 1875; 5470——Increase, also, under the head of Clothing, 5470–5472.

Much larger outlay for coals in recent years than in 1866 and 1867; 5473——Considerable increase under the head of repairs to engines, 5474, 5475——Increased charge for telegraphy according to the number of stations, 5475, 5476——Diminishing charge for rent as new stations are being built by the Board, 5476.

Evidence in detail relative to the system at Manchester whereby the insurance companies and the owners of uninsured property contribute towards the expenses of fire extinction; provisions on the subject in the Manchester Police Regulation Act, 5477–5488——Opinion that power is required in London to charge the owner of uninsured property which is attacked by fire, 5477. 5481. 5490–5498. 5510.

Large proportion of uninsured property in London which belongs to the poorer classes, and escapes charge for fire extinction, save under the halfpenny rate, 5480——Conclusion that in London it is not fair to make the rateable value the basis of contribution for the support of the fire brigade, 5480, 5481.

Annual cost of the Manchester brigade and proportion borne by the insurance offices and the owners of uninsured property, 5499–5506——Connection between the brigade and the Manchester police, 5507–5509——Approval generally of the present rate of contribution by the insurance offices in London, 5511——Increasing amount of Government property protected by the brigade; extra payment made for the Post Office, 5512, 5513——Employment of some extra men of the brigade in private establishments, for whom payment is received, 5514–5516.

Information in connection with the increased borrowing powers of the Metropolitan Board for the purposes of the fire brigade under the Loans Act of 1869; further capital expenditure of 75,000 *l.* under the powers of this Act, 5526–5536——Necessity under the Act of 1875 of application to Parliament for any further increase of the capital account; increase of 15,000 *l.* under the Act, 5537–5541——Total of 130,000 *l.* raised on capital account, there being now an application to Parliament for a further expenditure of 10,000 *l.* in 1877; this is irrespective of the new head-quarters station, 5542–5547.

Total expenditure of 115,399 *l.* on stations, 5548——Total of 14,824 *l.* expended in repairs and alterations of stations, 5548–5552——Further argument that owners of uninsured property should in fairness pay for the cost of protection, 5553–5556——Explanation as to the relative charge for wages and for other expenses generally in 1867 and in 1875; 5557–5566.

Trifling amount represented by the men's fines, these being in diminution of wages, 5567–5571——Very exceptional instances of total destruction of insured property, 5572, 5573——Liability of the public to a fine of 1 *l.* for each chimney fire; remission or reduction of the fine in numerous instances owing to the poverty of the occupiers, 5574–5576.

Gunn, Mr. Report by Mr. Gunn upon the subject of a superannuation fund for the brigade, *App.* 657–660.

H

Hamburg. Suitable arrangements in Hamburg, though not applicable to the different conditions of London, *Captain Shaw* 1070–1074.——Enormous losses of insurance offices through the great fire at Hamburg, *Lovell* 6397.

Hamlyn, William. (Analysis of his Evidence.)—Long experience of witness in the fire brigade, in which he is superintendent of the D division, 1765–1768——Average of from thirteen to fourteen hours as the daily duty of the men in the division in April 1876; 1769–1773——Total of nineteen stations and twenty-seven fire escapes in the division, 1774——Telegraphic communication between some of the stations; facility thereby in taking prompt action when fires occur, 1775–1780. 1837, 1838——Value of a multiplication of stations in further facilitating prompt attendance at fires, 1781–1784.

Considerable distance between some of the outlying stations in witness' division, only one or two men being sometimes available at each station, 1785–1790——Advantage if all the men could be lodged in the stations, 1791, 1792. 1945, 1946——Instances at

Report, 1876—*continued.*

Hamlyn, William. (Analysis of his Evidence)—*continued.*

large fires of officers having to work with the hose, &c., through the limited supply of men, 1973-1797. 1920-1928.

Great importance of a superannuation scheme as a means of etaining experienced men in the service, 1798–1808. 1819–1821. 1929–1936. 1972.——Expediency of men having a right to retire on a pension after thirty years' service, but only on medical certificate after twenty-five years, 1809–1814. 1937–1939. 1961–1964.

Smaller remuneration of superintendents in the fire brigade than in the police; suggested assimilation, 1815–1821. 1940, 1941——Concurrence in Captain Shaw's evidence on the subject of gratuities, 1822–1824——Valuable aid rendered by the police at fires; importance of their giving more direct assistance by having appliances at the stations, 1825–1830——Frequent scarcity of men at large fires, the men being dissatisfied with the overwork thrown upon them, 1832–1836. 1912, 1913.

Expediency in the first instance of increasing the number of men rather than of stations, 1839–1842——Total of only four men at Woolwich, there being only one station and one fire escape, 1843–1852——Several instances of unsatisfactory water supply at fires in witness' district, 1853–1859——Services rendered by some volunteer brigades in the district, more especially by the south metropolitan brigade, 1860–1877——Reference for sailors as recruits, 1881–1884.

Practice of witness as to visiting the stations, and reporting to Captain Shaw, 1885–1889——Advantage if there were a station at New Cross, 1890–1892——Few instances of complaint in regard to the arrival of engines from the present stations, 1893–1896——Particulars as to the duties of the men and the number of hours on duty though not at actual work, 1897–1919. 1947, 1948.

Impression that the men would not object to a deduction of 2½ per cent. from their pay, if satisfied on other points, 1929–1944——Doubt as to efficient men retiring on a pension after thirty years' service, and getting other employment, 1937–1939. 1950–1954. 1961–1964.

Very small leave given to the men, whilst they have no right to Sunday leave, 1955–1960—— Limited extent to which trained firemen are employed in theatres and other places of amusement, 1965–1971——Want of a sufficient number of men in the brigade to admit of a system of watches, as in the police, 1972.

Hand-pumps. Advantage of a supply of hand-pumps for use by the police on the first outbreak of fires; that is, if there were a constant service, *Captain Shaw* 1665–1667—— Slight value attached to small hand-pumps for use at the first outbreak of fires, *Easton* 6089-6092.——*See* also *Manchester,* 9.

Harris, Captain William Charles. (Analysis of his Evidence.)—Considerable experience of witness as Assistant Commissioner of police in the metropolis, 7846, 7847——Important advantages to be obtained by amalgamating the fire brigade with the police; dissent from Colonel Henderson on this point, and concurrence with the late Sir Richard Mayne, 7848–7853. 7926–7928——Advantage of connecting the police stations by telegraph with the fire brigade stations, and of keeping engines and apparatus at the former when not close to a brigade station, 7854-7856. 7861, 7862. 7872–7874.

Great value attached to a constant supply of water in the metropolis, at high pressure, and to a system of hydrants, 7857–7860——Suggestions for utilising the fixed points of the police, 280 in number, in reference to fires; advantage of the policeman at each fixed point going at once to any local fire and applying apparatus for its extinction, 7862–7871——Short time for which a man stationed at a fixed point need be absent at any fire, 7866–7869——Proposal for extending the fire brigade to the whole of the metropolitan police district, by utilising the police stations as fire brigade stations, 7875–7877.

Facility in keeping manual engines at the police stations, whilst there are always men enough to take them to fires and work them, 7878–7880——Recommendation that all the men in the force be drilled as firemen, in the same way as the dockyard police; slight additional drill necessary for this purpose, 7880–7886. 7923, 7924——Increase by more than 400 stations of the present number of brigade stations if all the police stations and fixed points be utilised as proposed, 7887–7892.

Opinion that the present brigade is very under-manned, 7893-7896——Advantage if the whole police force could be used as a reserve in the event of two or more very bad fires at the same time, 7897–7899. 7953——Suggestion for the training of some 500 policemen as turncocks, if there were a constant supply of water, so as to regulate the pressure at fires, 7900–7906——Proposition for dividing the metropolitan police area into eight districts, and for the organisation of the fire brigade force, as a part of the police, in each district, 7907–7922.

Jealousy on the part of the fire brigade when their services are required at Woolwich, where the dockyard police are trained as firemen, 7924——Satisfaction given by a scheme propounded by witness for the Turin fire brigade, 7929–7932——Limited increase of expenditure

Report, 1876—*continued.*

Harris, Captain William Charles. (Analysis of his Evidence)—*continued.*

expenditure involved in the scheme for utilising the police stations, and for keeping engines and apparatus at them, 7933–7942——Want of a fire brigade station near Downham-road, Dalston, 7934–7936——Suggestion that policemen trained to act also as turncocks might have 1 *s.* a week extra pay, 7943, 7944.

Proposed establishment of a central station or depôt where the apparatus should be stored and where recruits should be instructed in the use of the engine, &c.; use to be made of the station also for police purposes, 7945–7948——Contemplated increase of the brigade so that it shall comprise 693 men and boys; great danger now incurred through the force not being able to cope with two or more very large fires simultaneously, 7945–7955.

Expediency of the brigade men having the same advantages as the police on the score of superannuation, 7956–7958——Inadequacy of any superannuation scheme based entirely on the men's contributions, 7959——Valuable assistance now rendered by the police at fires, it being advisable, however, to place the police and the brigade men under the same management, 7960–7967——Importance of prompt attendance from the local police stations, even though the fixed points may not be utilised in the same way, 7968, 7969.

[Second Examination.] Explanation that in proposing to amalgamate the fire brigade with the police, witness does not contemplate all the fire brigade stations being necessarily at police stations, but suggests that the former be supplemented by the latter, 7970, 7971——Further suggestion that all the police be drilled as firemen, a supplementary force of nearly 10,000 men being thus obtained, 7972. 7988.

Few fires now attended by witness, 7974–7977——Increased efficiency of the brigade since its transfer to the Metropolitan Board, witness finding no fault with the men or with the plant, 7978–7989——Want, however, of a numerical increase of the brigade, and of a better organisation, 7986–7990——Grounds for the statement that jealousy and want of co-operation have been experienced on several occasions at Woolwich, as between the dockyard police and the fire brigade, 7991–7997.

Circumstance of witness not having considered the question of expense in advocating a constant water supply at high pressure with a system of hydrants, 7998–8003——Further statement as to policemen at fixed points being able to go to local fires without prejudice to the public during their temporary absence, 8004–8007——Way in which the operations of the brigade might be extended to the metropolitan police area, without necessitating any increase of stations, 8008–8012.

Approval of the fire escapes being under the fire brigade branch of the police, it not being necessary to instruct all the police in their management, 8013–8017——Relative time required for the training of a fireman, and of a policeman, 8018–8021——Doubt as to the increase of expense involved in the drilling and training of policemen as firemen, and in the creation of eight separate fire brigade districts, instead of four, 8022–8025——Doubt whether any difficulty would arise at fires in the City if the brigade were under the Metropolitan police; that is, on account of the separate jurisdiction of the City police, 8026–8035. 8053–8055. 8076–8088.

Material assistance which may be given by the police as a separate force, though co-operation would be more effectual if there were an amalgamation of the two bodies, 8037–8039——Feeling among the men as to there being a want of co-operation at times, 8040, 8041——Effect of a large reserve force in preventing the occurrence or spread of many serious fires, 8042–8044. 8052——Waste of strength in keeping the fire escape men on duty, 8045——Explanation that the fire brigade scheme proposed by witness for Turin had no reference to the police, 8046–8048.

Satisfactory operation of the system in the Dockyards, whereby the police form, exclusively, the fire brigade, 8049, 8050——Difference between the area under the Metropolitan Board and the metropolitan police area, 8056——Advantage in recruiting more largely from the sailor class, if policemen are to be selected for the fire brigade, 8057–8060——Important duties devolving on the police when fires occur, 8061–8066.

Advantage of the greater unanimity to be secured by the brigade and the police taking their orders from the same authority, 8067–8070——Increased rate necessary for the police if the fire brigade be transferred, the ratepayers having no control as to the expenditure of such increase, 8071–8075.

Head Quarters. See *Central Station.*

Heal and Sons. Very serious fire at Messrs. Heal and Sons in April 1871, the damage by which would not have been nearly so great if the former station in Crown-street, Soho, had not been removed, *Swanton* 7090. 7302–7306.

Henderson, Lieutenant Colonel Edmund Yeamans Walcott, C.B., R.E. (Analysis of his Evidence.)—Experience of witness, as chief of the police in London, in regard to the working of the fire brigade, 7730–7732——Advantages anticipated from a telegraphic connection of the police stations with the fire brigade stations, 7733–7736. 7741. 7810, 7811——Advantage, also, if some apparatus were kept at the police stations which could be

Report, 1876—*continued.*

Henderson, Lieutenant Colonel E. Y. W. (Analysis of his Evidence)—*continued.*

be promptly applied by the police; facility on this score if there were a constant pressure with a system of hydrants, so that hose might be attached by the police, 7734. 7742–7745. 7764–7766. 7775–7778. 7783.

Expediency, as a rule, of the duties of the police being confined to the preservation of order and the protection of life and property, witness seeing no advantage in the fire brigade being under the jurisdiction of the Commissioners of Police, 7737–7740. 7751–7753. 7759–7769——Limited extent to which it is desirable that the police should have charge of manual engines, 7737–7740. 7779——Degree of advantage to be derived from placing the fixed points, 280 in number, at each of which a policeman is stationed, in communication with the fire brigade stations; advantage in a supply of hose, &c., being available at each fixed point, 7746–7758. 7764–7778.

Facility as to the use of manual engines, &c., by the police, whether the fire brigade is, or is not, made a part of the police force, 7759–7766——Increased charge for the police if they are to undertake additional duties; prospect, however, of a diminution of serious fires, 7770–7774. 7788. 7822, 7823——Non-objection to hand-pumps being kept at the police stations; difficulty as to supply of water without the aid of turncocks, 7779–7782——Harmonious co-operation between the police and the fire brigade, 7784, 7785——Efficient working of the brigade, 7784——Inexpediency of any diminution of the brigade, even though the police should render direct assistance in aid of fire extinction, 7786–7788.

Explanation upon the subject of police superannuation; objection to the men being entitled to claim pensions after a certain length of service, irrespectively of exceptional misconduct, 7789–7793——Probability of service in the police being less hazardous to life than service in the brigade, 7794, 7795——Belief that no economy could be effected from an entire transfer of the brigade to the police, 7796——Nor does witness see any advantage in amalgamation, so long as the present system of supply of water is in force, 7797.

Duty of the police to convey prompt information as to fires, but not to aid in their extinction; witness further submitting that they had better be confined to their proper duties, and that they have quite enough to do already, 7798–7805. 7807. 7817——Room for manual engines at all the principal police stations, 7806. 7838. 7843, 7844——Very little extra drill required in order to teach the police the use of manual engines, 7807–7809——Further considerations as to the advantage to be derived from placing the fixed points of call in telegraphic communication with the brigade stations, 7812–7823.

Opinion that there is no direct connection between the duty of protecting life and property against fire, and the duty of protection against other risks, 7824, 7825. 7833——Conclusion as to the necessity of the brigade being still kept a separate and distinct body if the administration were transferred to the police, 7826–7832——Occasional deficiency of water at fires, this being the only complaint heard by witness, 7834, 7835.

Advantage of an increase of fire brigade stations, this probably involving an increase of force and of charge, 7836, 7837——Total of 152 police stations; doubt as to the average distance apart, 7839–7842——Objection to an amalgamation of the brigade with the police, in so far as the former might be available in case of riots, 7845.

Hill, John. Gratuity of four guineas given to John Hill, discharged after ten months in ill health caused by the service, *Captain Shaw* 780–783.

Holborn Station (*Fire Brigade*). Exceptional amount of sickness under which out of nine men attached to Holborn Station only one or two have been available to go to fires, *Captain Shaw* 669–677——Approval by the Metropolitan Board of Captain Shaw's suggestions for a new arrangement at the Holborn Station in consequence of the discontinuance of the station in Crown-street, Soho, *De la Hooke* 3301.

Report by Captain Shaw, dated 5th December 1870, as to the new arrangements desirable as regards the protection of Holborn through the removal of the fire engine station from Crown-street, Soho, *App.* 650.

Paper proposed by Mr. Swanton showing the several fires which have occurred since the removal of the former station from Crown-street, *App.* 685, 686.

Horse Hire. Three different modes of horsing the brigade, there being no horses actually belonging to the brigade, *Captain Shaw* 1144, 1145——Great increase in the cost of horse hire as compared with witness' original estimate, *ib.* 1243–1251.

Probable saving of from 3,000 *l.* to 4,000 *l.* a year in horse hire, if there were a sufficient pressure for hydrants, *Richardson* 4949. 4955——Equal expense of horse hire whether the engines are concentrated or scattered, *ib.* 4991, 4992——Payment of 150 *l.* a year for the use of two horses, with 50 *l.* a year for the driver, the latter not being a fireman, *ib.* 4993–4996——Efforts of the Board in order to keep down the cost of horse hire, *ib.* 5028, 5029.

Steady increase in the charge for horse hire from 3,748 *l.* in 1866 to 8,492 *l.* in 1875, *Gunn* 5470.

Horseferry-

Report, 1876—*continued.*

Horseferry-road Station. Explanation as to the Board having closed the station in the Horseferry-road, *De la Hooke* 3245–3247——Relative advantages of leather hose and flaxen hose; facility for the use of the former at Brighton, *Easton* 6065-6070——Particulars relative to the canvas hose used at Manchester; its advantage over leather hose, though not so durable, *Tozer* 6802–6805. 6858. 6896–6899.

Improvement if each fire escape carried with it one or two lengths of hose for application to hydrants, *Swanton* 7017, 7018——Advantage of flaxen hose at the police stations as being much more easily handled than leather hose, whilst the latter is more desirable, *ib.* 7034–7038.

See also *Hydrants.* *Police.*

Hose Vans. Provision of four new hose vans instead of eight as recommended by Captain Shaw in December 1875, *De La Hooke* 3267.

Hours of Duty:

1. *Representations by Captain Shaw, and Complaints on the part of the Men, as to the excessively Long Hours of Duty, and the Want of Opportunities for Sleep and Rest.*
2. *Hours of the Men attached to the Floating Engines.*
3. *Continuous Duty on Sunday.*
4. *Evidence in denial that the Men are Overworked; Responsibility attached to Captain Shaw as to the excessively Long Hours in Individual Cases.*

1. *Representations by Captain Shaw, and Complaints on the part of the Men, as to the excessively Long Hours of Duty, and the Want of Opportunities for Sleep and Rest.*

Continuous hours of duty of the men inasmuch as, if not actually at work, they are required to be always in readiness for work, *Captain Shaw* 304–307——Obstacle to a system of regular watches, as in the police, *ib.* 305, 306——Frequency of men being on duty for twenty-four hours; instances of men on duty for sixty-four, seventy-four, 108, and even 120 successive hours, *ib.* 686–695——Limited opportunities of the men on duty for lying down or getting any rest, *ib.* 696–699.

Impracticability of subsequently making up to the men the time for which they have been at work over and above their usual hours, *Captain Shaw* 700–703——Statement as to the men not complaining of overwork, though witness has made representations on the subject, *ib.* 709–713——Frequency of men breaking down in health on account of the severity of the work, *ib.* 714, 715.

Average of from thirteen to fourteen hours as the daily duty of the men in the D division in April 1876, *Hamlyn* 1769–1773——Particulars as to the duties of the men and the number of hours on duty, though not at actual work, *ib.* 1897–1919. 1947, 1948——Want of a sufficient number of men in the brigade to admit of a system of watches, as in the police, *ib.* 1972.

Statement in support of the representations by the men as to their being greatly overworked; average of fourteen hours a day at witness' station, *Port* 1987–1991——Further evidence as to the excessive hours of duty of the men, though they may not be actually at work all the time, and as to the want of regular nights off duty, *ib.* 2172–2177. 2191–2196.

Considerable discontent in the service, owing to the long continuous hours of duty; expediency of an increase of force, so that the men may have some time at their disposal and may count upon one night a week off duty, *Duck* 2294–2297. 2347–2363. 2377–2383——Continuous work of witness' men for about fourteen hours daily, whilst they are liable to be called for duty during the remaining ten hours, *Bull* 2400–2402.

Particulars relative to the excessive hours of duty of witness, and the other men at the Camberwell station; average of about sixteen hours daily, whilst they are always liable to be called out, and witness has recently been on duty for a week without taking off his clothes, *Morris* 2618–2631. 2682–2687. 2693–2697. 2705–2713. 2743–2757——Explanation that witness has only one night in bed out of four, but sleeps at other times in his clothes, *ib.* 2743–2757.

Discontent among the men as to the excessive hours of duty, *Wittwer* 2773–2775——Complaint by the men as to the excessive hours of duty; illustration in witness' case, he having only one night out of five on which he can undress and go to bed, *Fitzmaurice* 2802–2811. 2821–2824.

Unfair and unjust evidence of Mr. Swanton as regards the duties and hours of labour of the fire brigade men, *Captain Shaw* 8093, 8094.

Report by Captain Shaw, dated 2nd November 1867, relative to the deficiency of regular staff for the fire escapes, and the heavy work devolving on the staff generally, *App.* 606—— Statement by Captain Shaw, under date 25th May 1868, as to the very heavy duties devolving upon his men, *ib.* 608.

HOURS OF DUTY—continued.

1. *Representations by Captain Shaw, &c.*—continued.

Table showing distribution, number of calls received, and duties done during the month of April 1868, *App.* 609——Table showing the distribution of the brigade on 6th June 1868, and the number of men required in order to allow every man one night in bed each week, *ib.* 611.

2. *Hours of the Men attached to the Floating Engines :*

Particulars as to the excessively long continuous hours of duty of witness and others in connection with the floating station off Rotherhithe, *Kelly* 2472–2492. 2513–2518. 2539–2547——Arrangement whereby one man out of six is generally spared to go to church on Sunday, *ib.* 2493–2495.

3. *Continuous Duty on Sunday :*

Want of opportunities of relieving the men on Sunday, *Captain Shaw* 1580, 1581——Very small leave given to the men, whilst they have no right to Sunday leave, *Hamlyn* 1955–1960; *Bull* 2402-2406. 2445-2447——Similar duty on Sunday as on other days, save that there is not so much cleaning done on Sunday, *Morris* 2745.

4. *Evidence in denial that the Men are Overworked; Responsibility attached to Captain Shaw as to the excessively Long Hours in Individual Cases :*

Statement to the effect that since 1868 no special complaint has been made to the Board, either by the men or by Captain Shaw, upon the subject of overwork, *De la Hooke* 2945–2952. 2965–2972——Circumstance of there having been no tabular return since 1868 of the hours of duty of the men, *ib.* 3452–3454.

Complaints as to the unfair and exaggerated character of certain evidence of Captain Shaw upon the question of overwork of the men; denial that their duties, though irksome and monotonous, are breaking down their health, *Freeman* 3894-3910.

Responsibility resting with Captain Shaw in the matter of the long continuous hours of duty in individual cases, without opportunities for proper rest or for sleep; facilities which might be afforded on the latter score if Captain Shaw's discipline were not so exacting, and if he did not require so much polishing and cleaning of the engines, &c., *Freeman* 3895-3902. 3905. 4096–4099——Until stated by Captain Shaw in evidence, witness was not aware of men being on duty for 108 and 120 consecutive hours, *ib.* 3895, 3896.

Facility of arranging for the attendance of men at church by a modification of the discipline now in force, *Freeman* 4078. 4290–4294——Opportunity of the men for getting sleep without taking their clothes off, though liable to be woke by the telegraph bell, *ib.* 4087–4095.

Witness denies that his views are diametrically opposed to those of Captain Shaw, and that he has "stigmatised" the evidence of the latter, though in several respects it has been very exaggerated and unfair, *Freeman* 4202–4205——Opinion that the duties of a fire brigade man are infinitely preferable to those of a policeman, *ib.* 4230.

Painful surprise to witness in the matter of Captain Shaw's evidence, and of other evidence, as to the exceedingly long hours of duty of the men, *Freeman* 4279–4285. 4338——Exception taken to a statement in a petition from the men in February 1874, that their health was injured by overwork, *ib.* 4282, 4283——Admission as to the long hours of duty being irksome; denial, however, that there is actual hard work or that health is injured, *ib.* 4283, 4284.

Further statement as to Captain Shaw having had it in his power to give more rest and time for sleep by a re-arrangement of the duty of cleaning the engines, &c., *Freeman* 4285, 4286——Monotonous rather than exhaustive duties of the men; number of calls to fires adverted to hereon, *ib.* 4401–4404.

Trying duty of the men in being kept so long at the stations waiting for calls to fires, an increase of men being required so as to admit of additional leave, *Richardson* 4978, 4979——Denial that the men are overworked, though an increase of staff is required on the score of leave, *ib.* 5055.

Statement as to Captain Shaw not having represented to the Fire Brigade Committee that the men were overworked, or were, in individual cases, necessarily employed for a great number of consecutive hours, *Thompson* 5130–5132. 5135, 5137——Recent visit of witness to some large stations, partly suburban, the absolute work at which was very light, *ib.* 5193–5196. 5219——Duty of Captain Shaw to have applied a remedy so as to prevent a man at any station being on duty for so long as 106 consecutive hours, *ib.* 5194——Facilities at Chelsea, Paddington, and certain other stations for some of the men attending church on Sundays, *ib.* 5212–5219.

Examination with further reference to the hours of duty of the men and the question of overwork; less onerous duties at the Kensington and other stations visited by witness than at the more central stations, *Thompson* 5275–5291. 5300, 5301. 5308–5311. 5358, 5359.

Report, 1876—*continued.*

Hours of Duty—continued.

4. *Evidence in Detail that the Men are Overworked*—continued.

Doubt as to the brigade men being overworked; hours of work of witness' men adverted to hereon, *Swanton* 7145-7147—The men in the Salvage Corps get, on an average, eight hours' work, eight hours' sleep, and eight hours' smoking their pipes, reading, &c.; witness considers that this equally applies to the brigade men, *ib.* 7146, 7147.

See also *Accounts. Blackheath and Lewisham Stations. Fire Escapes*, 5. *Leave of Absence. Paddington Station.*

Huddersfield. Illustration in the case of Huddersfield of the failure of a recent attempt to impose liability upon owners for the cost of fire prevention, *Tomkinson* 6730, 6731. 6733.

Hydrants:

1. *Powers of the Metropolitan Board of Works as to the Provision of Hydrants.*
2. *Explanations in Detail on the part of the Metropolitan Board as to the Difficulties on the Score of insufficient Pressure, and of partial constant Supply, which have hitherto prevented the Application of an extensive System of Hydrants throughout the Metropolis.*
3. *Objections on the Score of Expense; Estimates as to the very large Outlay involved.*
4. *Number of Hydrants required.*
5. *Question of dispensing with Engines.*
6. *Relative Advantages of Hydrants and Fire Plugs for the Supply of Water to Engines.*
7. *Different Kinds of Hydrants.*
8. *Small Number hitherto provided by the Metropolitan Board.*
9. *Necessity of a complete Re-arrangement of Pipeage, and of General Regulations as to Pressure before laying down a System of Hydrants.*
10. *Evidence favourable to a large Extension of Hydrants throughout the Metropolis, with Suggestions as to Details.*
11. *Suggestions in Report by Captain Shaw in* 1866.
12. *Objections on the part of the Water Companies in* 1866.
13. *Documentary Evidence showing the Conclusions arrived at by the Metropolitan Board, and by the Works and General Purposes Committee.*

1. *Powers of the Metropolitan Board of Works as to the Provision of Hydrants:*

Authority vested in the Metropolitan Board under the Act of 1871 to require the water companies to lay down hydrants, in connection with a constant supply; that is, at the expense of the Board, *De la Hooke* 2851-2854.

Explanation that the question of hydrants as involving a large capital outlay is dealt with by the Works and General Purposes Committee, and not by the Fire Brigade Committee, *Thompson* 5177, 5178.

2. *Explanations in Detail on the part of the Metropolitan Board as to the Difficulties on the Score of insufficient Pressure, and of partial constant Supply, which have hitherto prevented the Application of an extensive System of Hydrants throughout the Metropolis:*

Inquiry made by the Board before deciding that it was not expedient under existing conditions of water supply to put down hydrants to a large extent, *Captain Shaw* 1349-1351—Great value doubtless of hydrants where the mains are constantly charged at a good pressure, witness concurring, however, in the decision of his Board that it is not expedient to apply them extensively in the metropolis whilst large portions of the districts remain under intermittent supply, *ib.* 1551-1562.

Circumstance of Major Bolton having reported that hydrants might have been substituted for fire plugs upon about one-third of the entire mains of the metropolis, which are constantly changed, *De la Hooke* 2887-2890—Authority of Sir Joseph Bazalgette and of Captain Shaw upon which the Board have concluded that the constant supply was not given under such conditions as would justify a general application of hydrants, *ib.* 2891-2898—View of Sir Joseph Bazalgette adverse to the provision of hydrants unless a sufficient pressure were ensured, *ib.* 2893-2895.

Explanation that the decision as regards hydrants has been founded on the chief engineer's report, irrespective of the question of expense, as well as upon Captain Shaw's views in concurrence with such report, *De la Hooke* 3273-3286—Circulation by the Board among the water companies of a report by Captain Shaw in 1866 relative to hydrants; doubt as to the Board having adopted the report, *ib.* 3307-3313. 3419-3421.

Reference to a letter from the Board to the East London Company as setting forth the grounds for the conclusions that it it was not advisable at present to lay down a large number of hydrants throughout the metropolis; difficulty especially on the score of insuffi-

Report, 1876—*continued.*

HYDRANTS—continued.

2. *Explanations in Detail on the part of the Metropolitan Board, &c.*—continued.

cient pressure, *De la Hooke* 3356-3367——Unfavourable result of experiments with hydrants in one of the districts under constant supply south of the Thames, *ib.* 3356. 3360-3363——Mature consideration given by the Board to the whole question of hydrants, and very careful inquiries made before coming to any decision on the subject, *ib.* 3384-3389. 3461, 3462. 3474-3478.

Examination upon the question of hydrants to the effect that on account of the insufficient and unreliable pressure in the mains it is not expedient to incur the expense of laying them down extensively in the metropolis, *Freeman* 3940-3980; *Richardson* 4676. 4690 *et seq.*——Authority of Sir Joseph Bazalgette and others upon which the Board have decided that they would not be justified in applying a costly system of hydrants under the present conditions as to pressure, *Freeman* 3959-3967.

Further statement as to the hydrants being of little use without proper pressure, and as to Captain Shaw having always held this opinion, *Freeman* 4247——Conclusion further expressed as to the impolicy of laying down hydrants with the pressure now obtainable, *ib.* 4377-4381.

Concurrence in Captain Shaw's opinion as to the great value of hydrants; that is, under certain conditions as to constant supply and sufficient pressure, such conditions being wanted in London, *Richardson* 4677 *et seq.*——Unsatisfactory result of certain experiments by Sir Joseph Bazalgette as to the pressure to be calculated upon, *ib.* 4695, 4696. 4731-4738.

Denial that the Metropolitan Board ever pledged themselves through their counsel upon the inquiry in 1871 to apply hydrants extensively, regardless of the question of expense, *Richardson* 4904-4910——Approval of an extended use of hydrants if there were a pressure of not less than 300 feet, *ib.* 5002, 5003.

Evidence to the effect that it is not advisable to incur the expense involved in putting down hydrants throughout the metropolis, the pressure in the pipes being insufficient, *Thompson* 5159-5177——Admission as to hydrants being a valuable security where the pressure is sufficient; result of their application in the Kent Company's district, *ib.* 5160-5166. 5174-5176——Authority of Sir Joseph Bazalgette for the conclusion that the necessary pressure cannot be obtained for an extensive system of hydrants, *ib.* 5384.

Grounds for the conclusion that the pressure in the mains or pipes generally is altogether inadequate for the efficient working of hydrants and hose, *Sir J. W. Bazalgette* 5592 *et seq.*——Unreliable pressure for throwing a jet of water to a good height by means of hydrants and hose, witness submitting that engines cannot be safely dispensed with, *ib.* 5602-5612. 5622 *et seq.*——Particulars as to the result of some recent experiments at Grays, Essex, *ib.* 5613, 5614. 5622-5626.

Opinion that on the whole hydrants cannot be usefully applied in aid of engines with the present pressure, *Sir J. W. Bazalgette* 5643-5645——Dissent from certain evidence of Mr. Quick in 1871 as to the expediency of hydrants wherever the mains are constantly charged, 5650-5652——Want of a pressure from fifty to fifty-five pounds at every hydrant in case of fire, *ib.* 5677-5684. 5688-5691——Importance, however, of hydrants in districts where there is a sufficiently good pressure, *ib.* 5753. 5772.

Concurrence of Captain Shaw and witness in a report to the Metropolitan Board, strongly adverse to the use of hydrants, unless a sufficient pressure of water were insured, *Sir J. W. Bazalgette* 5807-5812.

Uselessness in putting hydrants upon mains in which there is no greater pressure than forty feet; grounds for this conclusion, *Bramwell* 5822-5828——Evidence to the effect that whether mains are devoted to constant supply or to intermittent supply, it would be equally a waste of money to apply hydrants with such a pressure as forty feet, *ib.* 5823-5828——Important deduction to be made on the score of friction in the pipes, and on other grounds, in calculating the pressure for the application of hydrants, unless they can be used to throw water at a proper height upon fires, *ib.* 5823. 5826——Possibility, doubtless, of placing hydrants over a considerable area, supplied at a good pressure, *ib.* 5845.

Special importance of due consideration of the enormous loss of pressure consequent upon the delivery of a large quantity of water upon a particular spot, *Bramwell* 5907——Importance, also, of the question of the size of the pipes in connection with the use of hydrants, *ib.* 5907. 5913-5915——Reasons for the provision of hydrants in the City which do not apply to the rest of the metropolis, *ib.* 5910, 5911——Several matters by which the pressure is regulated as well as by the elevation of the ground, so that the carrying out of a system of hydrants must be carefully considered in detail, *ib.* 5949-5951.

Entire inadequacy of the pressure generally for the efficient working of a system of hydrants throughout the metropolis, *Easton* 6012-6021——Disadvantage in having hydrants in some districts and not in others; confusion created thereby in the firemen, *ib.* 6014, 6015. 6020——Great importance, doubtless, of facilities, as at Manchester, Liverpool,

HYDRANTS—continued.

2. *Explanations in Detail on the part of the Metropolitan Board, &c.*—continued.

pool, and Brighton, for directly applying water to fires without the aid of engines, *Easton* 6022, 6023.

3. *Objections on the Score of Expense; Estimates as to the very large Outlay involved:*

Unjustifiable expenditure in laying down an extensive system of hydrants under the partial constant supply now in force, *De la Hooke* 2884, 2885. 2891–2898; *Freeman* 3940–3980; *Richardson* 4676–4690 *et seq.*; *Thompson* 5159–5177——Recent date at which the Board came to the decision not to incur the immense expense involved in putting down hydrants throughout the metropolis, *De la Hooke* 2884, 2885——Opinion of Captain Shaw that the great expense of hydrants was not justifiable irrespectively of the question of engines being dispensed with, *ib.* 2896.

Estimated expenditure of about three quarters of a million in laying down hydrants throughout the metropolis, witness submitting that the conditions as to pressure do not justify this outlay, *Richardson* 4714–4716. 4720. 4731. 4891–4894——Total cost of 10 *l.* per hydrant, if not laid down when the mains are laid, *ib.* 4782–4784——Fallacy of calculations as to the cost in London under a system of hydrants, if such calculations are based upon an assumed cost of only 4,737 *l.* in Liverpool, *ib.* 4935–4948.

Further consideration of the cost per hydrant in the metropolis, witness submitting that this cannot be put at less than 10 *l.*, including saddle pieces, &c., *Richardson* 4997–5001 ——Probable cost of a million sterling in laying down hydrants throughout London, *Thompson* 5167–5173.

Examination as to the cost of laying down different kinds of hydrants throughout the metropolis; estimate of from three-quarters of a million to a million for a full and satisfactory supply, *Sir J. W. Bazalgette* 5695–5735——Cost of 18 *l.* 13 *s.* for Captain Shaw's hydrant, *ib.* 5696, 5697——Conclusion as to the immense expense of hydrants throughout London, based upon the experience of Manchester and the cost there in proportion to the population, *ib.* 5708–5718——Assumption that a better and more expensive kind of hydrant would be used in London than has been adopted in Manchester; outlay of not more than half a million if the cost per hydrant is only 5 *l.*, *ib.* 5713–5725——Conclusion that any utility in hydrants would not be justified by the expense save in exceptional places, *ib.* 5726. 5778.

Very heavy expenditure in providing hydrants with stand-posts, *Bramwell* 5826—— Smaller cost in Liverpool and Manchester than in the City of London, witness concluding however, that the metropolis cannot be adequately supplied with hydrants for less than a million sterling, *ib.* 5871–5875——Excess beyond 10 *l.* for each hydrant proposed by Captain Shaw in 1866, *ib.* 5894, 5895——Several respects in which an entire reliance upon hydrants would involve exceedingly heavy expenditure, it being questionable whether the cost would not be out of proportion to the advantage to be gained, *ib.* 6002–6009.

Conclusion that the advantages to be derived from the application of hydrants throughout the metropolis would not be commensurate with the great cost involved, *Easton* 6016. 6021——Particulars relative to the cost per hydrant at Brighton, Manchester, and other places; conclusion as regards London that the cost would be considerably in excess of 10 *l.*, including the taking up and relaying of the pavement, *ib.* 6073–6086.

Opinion that the cost of putting down each hydrant will not exceed 10 *l.*, that being exclusive of the cost of the service pipe, *G. Shaw* 6222–6226——Estimate of from 3 *l.* to 4 *l.* as the cost per hydrant, plus the cost of breaking up the pavements, *Swanton* 7033.

Conclusion that with proper management, hydrants may be laid down as cheaply in London as in Manchester; very excessive cost in the City of London if the charge is as much as 20 *l.* per hydrant, *Berrey* 7382–7385. 7438–7441.

Calculations on the part of the Metropolitan Board as to the cost involved; saving on the other hand in respect of engines, *App.* 674.

4. *Number of Hydrants required:*

Data for the calculation that at least 100,000 hydrants would be required for all London, *Bramwell* 5866–5868——Proposal by Captain Shaw to place hydrants 100 feet apart on both sides of the street, *ib.* 5867 ——Want of ten or twelve hydrants for playing upon each large fire; that is, if ten or twelve engines are now required, *ib.* 5896—— Computation that with 100,000 hydrants in London, they would be from eighty to 100 feet apart; comparison hereon with Manchester, *ib.* 5934–5937. 5946–5948.

5. *Question of dispensing with Engines:*

Opinion that at present the brigade could not be reduced, no matter how many hydrants may be put down, *Captain Shaw* 1352——Grounds for the conclusion that engines could not be dispensed with by an extensive application of hydrants, *De la Hooke*

Report, 1876—*continued.*

HYDRANTS—continued.

5. *Question of dispensing with Engines*—continued.

2891–2898; *Thompson* 5159–5177; *Sir J. W. Bazalgette* 5592 *et seq.*; 5677–5684. 5688–5691.

Great economy as regards engines, horses, and stations, if hydrants could be put into efficient operation throughout the metropolis, *Richardson* 4788-4790——Proportion of engines to population in Manchester and Liverpool under the hydrant system, and in London respectively, *ib.* 4882–4885.

Illustration in the case of the recent fire at Brooks' Wharf of the necessity of engines in addition to hydrants, *Thompson* 5159. 5220–5225——Belief further expressed that nothing would be saved on the score of engines or men by putting down hydrants all over London, *ib.* 5383. 5386.

Opinion that with adequate pipeage, with high pressure and with constant supply, hydrants are preferable to steam fire engines, but that a few engines should in such case still be maintained, *Bramwell* 5997–6001——Necessity of some fire engines in London for reaching very lofty buildings, even if there were special mains for working hydrants at constant high pressure, *Easton* 6049–6052.

Explanation that witness contemplates the continued attendance of engines at fires, although hydrants should be largely provided, *Swanton* 7270, 7271. 7330, 7331——Necessity of engines as well as hydrants in London, the pressure not being universally sufficient for the latter, *Berrey* 7387, 7388. 7433-7437.

6. *Relative Advantages of Hydrants and Fire Plugs for the Supply of Water to Engines:*

Comparative advantage of plugs and of hydrants for supplying water for the use of engines, *Freeman* 3947–3951. 3967——Circumstance of Captain Shaw's not having represented to the Fire Brigade Committee that hydrants would be much better than plugs unless there were a constant and reliable pressure, *ib.* 3952–3954——Admission that to a certain extent hydrants would be a gain, the supply and pressure being satisfactory, *ib.* 3955–3958. 3961. 4352–4356——Consideration of certain evidence of Mr. Easton in 1862 as to the great advantage of hydrants, *ib.* 4352, 4353. 4444–4447.

Facility of obtaining supplies of water by means of plugs, as well as hydrants, under a constant service, *Richardson* 4680–4684——Exceptions taken to Captain Shaw's recommendation of hydrants, if only as a means of obtaining water more quickly; concurrence of Captain Shaw in Sir J. Bazalgette's report adverse to a large outlay on hydrants under the existing conditions of water supply, *ib.* 4775–4779.

Advantage of hydrants rather than plugs as a means of preventing waste of water at fires, *Sir J. W. Bazalgette* 5653, 5654——Conclusion, however, that plugs are as serviceable as hydrants for the supply of engines at fires, and that plugs now exist upon constantly charged mains without being forced out by the pressure, *ib.* 5654–5662. 5665–5673. 5692–5694.

Evidence in further support of conclusion that even with constantly charged mains hydrants possess no advantages over plugs for fire brigade purposes, though better for the water companies as preventing waste, *Sir J. W. Bazalgette* 5736–5755. 5772, 5773——Explanation that from a water company's point of view hydrants are in all cases preferable to plugs, *ib.* 5802–5805.

Slight advantage of hydrants over fire plugs on the score of facilitating the supply of water to the fire engines, *Bramwell* 5823. 5826-5828——Interference with the efficiency of the engine if water be used in waste by the hydrant, the pressure being insufficient, *ib.* 5824-5826.

Value of hydrants and service pipes as a means of ensuring a supply of water in the event of fire; absence, however, of any failure of supply of in the City, *G. Shaw* 6238–6240——Avoidance of waste, and increase of pressure thereby, by the use of hydrants instead of plugs, *Swanton* 7335-7337——Important advantage of hydrants over plugs, the former giving a better supply for engines at an increased pressure, *Berrey* 7388-7393.

7. *Different Kinds of Hydrants:*

Disapproval of the ball hydrants (as used at Manchester) by Mr. Taylor, engineer of the Lambeth Company, and by Mr. Rawlinson, *Sir J. W. Bazalgette* 5698. 5713-5718. 5720. 5796, 5797——Doubt as to a sufficiently good hydrant being put down for 5 *l.*, *ib.* 5734, 5735.

Doubt as to the water companies being satisfied with the cheaper class of hydrants, *Bramwell* 5874. 5875——Small services required of private hydrants in warehouses as compared with public hydrants in the streets, *ib.* 5881, 5882.

Various kinds of hydrants from which to select; advantage of the three-inch size, *G. Shaw* 6220, 6221. 6276, 6277.

Drawings illustrative of the various descriptions of sluice valve and screw-down hydrants proposed for use in the metropolis, *App.* 679.

8. *Small*

Report, 1876—*continued.*

HYDRANTS—continued.

8. *Small Number hitherto provided by the Metropolitan Board:*

Provision of some hydrants by the Metropolitan Board, these, however, being few in number, *Captain Shaw* 179. 1078, 1079——Explanation that the Board have authorised the placing of hydrants in some select places, and will probably extend their use locally, though at present unprepared to incur the large outlay involved in applying them throughout London, *Richardson* 4780–4789.

9. *Necessity of a complete Re-arrangement of Pipeage, and of General Regulations as to Pressure before laying down a System of Hydrants:*

Conclusion that it is entirely useless to establish any system of hydrants in London until all the water companies are under some general regulations as regards pressure, *Bramwell* 5896. 5899. 5906–5908——Necessity also of the pipeage being re-arranged between the engineers of the companies and the engineer of the Metropolitan Board; there must in fact be a settled plan of re-pipage, *ib.* 5896, 5897. 5908.

10. *Evidence favourable to a large Extension of Hydrants throughout the Metropolis, with Suggestions as to Details.*

Advocacy of hydrants as a means of preventing the rapid spread of fires by the instant application of water under constant supply; it is not proposed to do away with fire engines, *G. Shaw* 6196–6200. 6229–6230——Advantage of six-inch service pipes, rather than four inch if they are carried to any considerable distance from the main before the hydrant is fixed, *ib.* 6204, 6205——Non-interference with the intermittent supply for domestic purposes by having separate service pipes for hydrants, with a constant supply, *ib.* 6206–6208. 6300–6304.

Conclusion that constant pressure in London, with a system of hydrants, and with increased facilities for police assistance, would greatly diminish the number of bad fires, *Tozer* 6821–6833.

Satisfactory supply of water and sufficient pressure for working a system of hydrants and hose, over about two-thirds of London; the hydrants could be placed directly on the mains, *Swanton* 6971–6981.

Witness repeats that hydrants may be generally applied so as to work effectually with the present pressure; increased pressure obtainable by shutting off the domestic supply during the continuance of any fire, *Swanton* 7019–7032. 7046–7050——Gradual way in which hydrants should be brought into operation; that is, with reference to the local pressure, *ib.* 7047–7050.

Exceptions taken to certain experiments of Sir Joseph Bazalgette tending to show the general insufficiency of the pressure for the efficient working of a system of hydrants, *Swanton* 7262–7269——Sufficiency of the pressure further considered in connection with the application of hydrants; advantage of the latter, chiefly where the property is valuable, and where the mains are large, *ib.* 7332–7351.

Opinion that a system of hydrants and a constant supply may, by proper management, be applied in London as well as in Manchester, *Berrey* 7406–7416.

11. *Suggestions in Report by Captain Shaw in* 1866:

Report by Captain Shaw, dated 17th July 1866, containing suggestions in detail for a system of hydrants in connection with a constant supply of water, *App.* 665–667.

Plan of hydrant as proposed by Captain Shaw in 1866, *App.* 666——Arrangements proposed as regards mains, sluice cocks, and hydrants, *ib.*

12. *Objections on the part of the Water Companies in* 1866:

Communications from the several companies in 1866 urging various objections to a constant service at high pressure in connection with a system of hydrants, *App.* 667–672.

13. *Documentary Evidence showing the Conclusions arrived at by the Metropolitan Board, and by the Works and General Purposes Committee:*

Report made to the Works and General Purposes Committee of the Metropolitan Board by the chairman of the Board and the deputy chairman of the Committee, dated 12th October 1874, on the subject of hydrants; conclusion as to the great value of hydrants for the purpose of fire extinction, *App.* 673, 674.

Draft of proposed reply by the Board to letter from the East London Waterworks Company, of 14th January 1875, upon the question of placing hydrants throughout the metropolis, *App.* 643–645.

Extract from the Report of the Works and General Purposes Committee of 21st February 1876, upon the question of the use of hydrants; grounds assigned for the

HYDRANTS—continued.

13. *Documentary Evidence, &c.*—continued.

conclusion that the Board would not be justified in incurring the immense expenditure entailed, *App.* 642, 643,

See also *Banstead Asylum. Brighton. Christ's Hospital. City of London. East London Waterworks Company. Kent Waterworks Company. Liverpool*, 3. *Manchester*, 3. *New River Company. Northumberland Avenue. Police. Salford. Temple. Turncocks. Water Supply.*

I.

Inalienable Pensions. Advocacy of pensions at the end of twenty or twenty-five years, though there may have been misconduct; that is, not gross misconduct, *Captain Shaw* 871–875. 893–914; *Morris* 2670–2681.

Strong objection to Captain Shaw's suggestion that the men should have an inalienable pension after a certain service, irrespective of misconduct, and without any discretion in the Board; prejudicial effect upon the efficiency of the brigade, *Richardson* 4544–4551. 4614–4616.

Argument further opposed to inalienable pensions, irrespective of misconduct; though it is very improbable that after long and efficient service men would misconduct themselves, knowing that they could claim their pensions, *Richardson* 4876–4881.

Reiteration of objections to the proposal for inalienable pensions, irrespective of misconduct; expediency of the men trusting to the liberality of the Board in case of misconduct after many years of good service, *Richardson* 4911–4930. 4980–4982—— Question considered whether an inalienable right to pensions would not induce men to remain in the service, although they might have a legal right to leave, *ib.* 4917–4923.

Incidental Expenses. Annual charge of about 1,700 *l.* for incidentals, such as books, stationery, &c., *Freeman* 4156–4160——Due care taken to keep down the contingent expenses as much as possible, *Richardson* 5030, 5031.

Inquests on Fires. Approval of an inquiry by the police in certain cases of suspicious fires, though there may be no loss of life; witness could not undertake to prosecute, *Captain Shaw* 1195–1203——Conclusion further expressed as to the expediency of a power to hold inquests on fires, even though there may not have been any loss of life, *ib.* 1569–1573——Great expense involved in an inquiry into the origin of every fire, *Lovell* 6451.

INSURANCE COMPANIES:

1. *As to the former Brigade maintained by the Companies, and its Transfer to the Metropolitan Board.*
2. *As to the Arrangement by which the Companies contribute to the Cost of the present Brigade.*
3. *Question of increasing or reducing the Rate of Contribution.*
4. *Question whether the Insurance Offices should be called upon to make any Contribution.*
5. *Degree of Benefit to the Offices by the Operations of the Brigade.*
6. *Difficulty in supplying Returns showing Details as to Losses.*
7. *Question of the Company being represented in the Management of the Brigade.*
8. *Degree of Attention paid by the Metropolitan Board to Representations by the Companies.*
9. *Large Cost of Fire Insurance as compared with the Cost of Protection against Fire.*

1. *As to the former Brigade maintained by the Companies, and its Transfer to the Metropolitan Board:*

Extent of the establishment of the insurance companies' brigade, as handed over to the Metropolitan Board in 1866; total of thirty-eight fire engines and 131 men, *Captain Shaw* 102–107——Very extensive area served by the stations of the Metropolitan Board as compared with the area formerly served by the insurance companies, *ib.* 108, 109. 330–333——Cost of about 25,000 *l.* incurred by the insurance companies for the old brigade, 314, 315——Transfer of the old brigade to the new without any charge having been made, *ib.* 368, 369.

Reference to sixth section of the Fire Brigade Act of 1865, as showing the conditions under which the stations, engines, &c., of the insurance companies were transferred to the Board, *Lushington* 431–434. 465.

Object of the brigade, as first established by the insurance companies, to protect insured property by limiting the range of fires, but not to protect the metropolis generally, *Lovell* 6310, 6311. 6318, 6319; *Tompkinson* 6689.

2. *As*

Report, 1876—*continued.*

INSURANCE COMPANIES—continued.

2. *As to the Arrangement by which the Companies contribute to the Cost of the present Brigade:*

Contribution by the insurance companies at the rate of 35 *l.* for every million assured, *Lushington* 9 ——Large increase since 1866 in the contribution by the insurance companies to the cost of the brigade, *Captain Shaw* 1451, 1452——Contribution of 11,050 *l.* received from the insurance companies in 1866 and of 18,093 *l.* in 1875, *De la Hooke* 3424, 3425.

Gradual increase in the contribution from the companies as the amount of insured property increases, *Freeman* 4307——Voluntary arrangement in the first instance as to the companies making contribution, Parliament having, however, sanctioned an enactment giving legal force to such arrangement, *Thompson* 5228–5236.

Provision in the London Fire Brigade Act as to the insurance companies contributing 35 *l.* for every million insured towards the extinction of fires, *Lovell* 6307, 6308—— Explanation as to the companies not having objected, at the time of the transfer, to contribute to the last; twofold increase of the contribution with increase of business, *ib.* 6485–6488——Compromise involved in the undertaking by the companies to contribute at the rate of 35 *l.* for every million of insured property, *ib.* 6491. 6500, 6501.

Voluntary character of the contribution paid by the companies towards the cost of the fire brigade; there has never been any admission of the principle that the contribution was to be in proportion to the amount of protection afforded, *Tomkinson* 6686. 6688. 6692, 6693. 6717.

3. *Question of increasing or reducing the Rate of Contribution:*

Doubt as to there being any special claim upon the insurance companies for an increased rate of contribution, *Freeman* 4306–4308.

Argument that portion of the increased charge necessary for an increased brigade should in fairness be borne by the insurance companies, *Richardson* 4656–4671—— Evidence in further support of the conclusion that insurance companies should in equity contribute towards an increase of the brigade, it being expedient to base such contribution upon the amount of the rate, *ib.* 4754–4774.

Examination in reply to objections to witness' view, that the insurance offices should contribute an increased sum towards the cost of fire extinction; grounds for the concluclusion that they should pay one-third of the whole expense, less the amount expended for protection of life, *Richardson* 5058–5081——Calculation that instead of 18,000 *l.* the companies should now contribute 22,000 *l.*, *ib.* 5078.

Conclusion that the insurance offices should pay a very much larger contribution than they now pay, *Thompson* 5210——The offices should contribute about 50 *l.* instead of 35 *l.* per million of insured property, *ib.* 5226. 5342, 5343.

Approval generally of the present rate of contribution by the insurance offices in London, *Gunn* 5511.

Strong objection to any increase of the contribution, witness submitting, on the other hand, that it should be sensibly reduced, as a large portion of it has been diverted to the protection of life from fire, with which object the companies have nothing to do, *Lovell* 6308–6311. 6318, 9316——Further ground for a diminution of the companies' contribution, on account of the abolition or removal of stations which had formerly been placed by the companies in the centres of property, *ib.* 6309, 6310.

Considerable sum contributed by the companies to the cost of the brigade; claim to a reduced assessment, the money having been largely applied to purposes not contemplated by the companies, *Lovell* 6351, 6352. 6370. 6385, 6386—— Large expenditure for life protection, estimated at about one-fourth of the total expenditure, whereas the companies should not be asked to contribute for this purpose, *ib.* 6385, 6386. 6425, 6426. 6460–6463.

Comment upon the proposal that the companies should contribute more instead of less, witness contending rather that they should not contribute at all; undue rate paid by the offices as compared with the public rate, *Lovell* 6468–6470——Willingness of the companies to continue the present rate of contribution, if there be no diversion for the protection of life, &c., and if their representations to the Metropolitan Board receive proper attention, *ib.* 6510–6513. 6653——Belief that none of the companies are in favour of increasing the amount of contribution, *ib.* 6525–6527—— Grounds for the statement as to the offices paying in a much greater ratio than the public, *ib.* 6635–6639.

Decided objection to any increase of the present rate of contribution, *Tomkinson* 6690–6693. 6719, 6720——Exception taken to any diversion of the companies' contribution to purposes not contemplated at the time of the transfer of the brigade, as for the protection of life, *ib.* 6712, 6713—— Respects in which the present mode of contribution, at the rate of 35 *l.* for every million insured, is not equitable, *ib.* 6718——Objections to a contribution in proportion to the rate raised in the metropolis for the purposes of the fire brigade; preference for the present form of contribution, *ib.* 6721–6725.

INSURANCE COMPANIES—continued.

3. *Question of increasing or reducing the Rate of Contribution*—continued.

Return submitted by Mr. Thompson upon the subject of contributions by insurance offices upon the rateable value of the metropolis, *App.* 675.

4. *Question whether the Insurance Offices should be called upon to make any Contribution:*

Opinion as to the unfairness of taxing the insurance companies, *Captain Shaw* 1453——Great benefit of the brigade to the insurance offices, so that they should willingly contribute to the cost, *Freeman* 4358–4364——Exceptional conditions in the metropolis as regards the question of contribution by the insurance companies towards the fire brigade, *ib.* 4420–4427.

Conclusion as to the insurance officers at Manchester and Liverpool contributing towards the cost of the local brigades, *Richardson* 4658, 4659. 4662, 4663——Consideration of the judgment in the case of the Drighlington Local Board *v.* Bower, as bearing upon the question whether it is not entirely voluntary in the insurance companies in London to contribute any increased sum towards the cost of the fire brigade, *ib.* 4661. 4664. 4669–4671. 4895–4902.

Witness contends that it would be exceedingly unfair to increase the halfpenny rate so as to relieve the insurance offices altogether; argument that the latter are, strictly, the owners of the property, *quoad* fires, *Richardson* 4960–4969——Expediency of the cost of the brigade being all borne by the owners of insured property, if all property were insured, *ib.* 5098——Distinction drawn between buildings and goods as regards liability for the cost of fire prevention, *ib.* 5367–5374.

Further argument that the insurance companies, as deriving very large receipts and profits from the premiums for insurance, should in fairness contribute more largely in respect of the protection of insured property, *Thompson* 5374–5382. 5390–5393. 5414–5428.

Conclusion that the cost of the brigade should be entirely a municipal charge in London, as it is in all other places, save Manchester, *Lovell* 6309. 6312. 6324. 6353–6356. 6452–6454. 6483–6501——Respects in which it is not merely the insurance companies who are interested in the extinction of fires; very few people who insure to the full value, *ib.* 6359–6365——Entire erroneousness of the view that insured property becomes the property of the companies in the event of fire, *ib.* 6471–6475——Special condition in the policies as to the companies having access to the property, *ib.* 6472.

Statement in further refutation of the theory as to insured property belonging to the companies, *Lovell* 6480–6482——Object of the companies mainly to limit the range of large fires, whilst the Board look to the protection of all the metropolis, *ib.* 6485. 6489–6491. 6500, 6501.

Special arrangement under which both in Liverpool and Manchester the insurance offices contribute to the cost of the fire brigades, whilst in London the contribution is compulsory under Act of Parliament, *Lovell* 6669, 6670——Dissent from certain arguments purporting to show that the offices, as making a profit out of the insurance of moveable property, should in fairness contribute towards the protection of such property, *ib.* 6675–6680.

Conclusion that the extinction of fires is an obligation which rests entirely with the local authority, and that the insurance offices should not be liable to any tax for the purpose, *Tomkinson* 6686, 6687. 6690–6698——Explanation that the special arrangement by which the offices in Liverpool and Manchester pay towards the cost of the local brigades affords no precedent for the principle of taxing insurance companies for fire extinction, *ib.* 6694–6698.

Decided impolicy of any legislation which would establish the principle of the taxation of insurance companies for the extinction of fires, *Tomkinson* 6714–6717——Conclusion as to its being almost impossible to lay down any equitable basis for the taxation of the companies, *ib.* 6718——Concurrence in the view that the protection of property from fire is a police question, and, as such, one which should not involve the taxation of insurance offices, *ib.* 6745–6747.

5. *Degree of Benefit to the Offices by the Operations of the Brigade:*

Doubt as to the extent of benefit to the insurance companies by a more costly and efficient brigade, as the premiums are arranged according to the risk, *Captain Shaw* 1274, 1275.

Exception taken to Captain Shaw's conclusion that a very large brigade would have the effect of greatly reducing the insurance premiums paid by the public, *Freeman* 3920, 3921——Conclusion further expressed that any further reduction to be made in the number of serious fires by an increase of the brigade would not have the effect of reducing insurance premiums, *ib.* 4123–4129——Statement that the insurance offices

Report, 1876—*continued.*

INSURANCE COMPANIES—continued.

5. *Degree of Benefit to the Offices by the Operations of the Brigade*—continued.

offices like to have some fires, as inducing the public to insure, *Freeman* 4128, 4129. 4143.

Conclusion as to the valuable services rendered by the brigade to the companies, so that the latter should in equity make fair compensation, *Thompson* 5374–5382. 5414–5428——Very exceptional instances of total destruction of insured property, *Gunn* 5572, 5573.

Effect of better precautions and of decrease of fires in inducing the public to insure for less amounts, to the prejudice of the companies, *Lovell* 6383, 6384——Deprecation of the notion that the companies are not averse to small fires, and are careless about their prompt suppression, *ib.* 6418, 6419——Increase of premium when losses are heavy, whilst there is a prompt reduction when there is a decided improvement, *ib.* 6509.

Interest of the companies to maintain a fire brigade, if there were not a public brigade; the stations would be placed only where there are large accumulations of property, *Lovell* 6534–6538——Explanation that the companies do not desire the occurrence of small fires, though they might not take special steps for the prevention, *ib.* 6543–6545.

Security for reasonable insurance rates; competition in operation, although upon certain classes of property the companies agree as to the rates to be charged, *Tomkinson* 6740, 6741——Tendency to reduced insurance of property when there is a station in close proximity, *Swanton* 7359.

6. *Difficulty in supplying Returns showing Details as to Losses:*

Obstacle to any correct return of the annual losses paid by the companies within the metropolis, *Lovell* 6409, 6410——Misleading effect of any return of the annual losses of the companies; very long period over which any average of losses should be taken, *ib.* 6455–6459.

Insuperable difficulty of supplying a return showing the losses of the several companies in the metropolis since the transfer of the fire brigade to the Metropolitan Board, *Tomkinson* 6726——Obstacle to any return showing the relative amount of insurances paid upon moveable property and upon buildings, *ib.* 6735.

7. *Question of the Companies being represented in the Management of the Brigade:*

Doubt as to the companies, though contributing to the cost, having any right to be represented in the management, *Shaw* 1453–1459——Objection to the insurance offices being represented on the Fire Brigade Committee, *Richardson* 4753, 4754——Reasons further assigned for not giving the insurance offices a representation in the expenditure of the money, *ib.* 4973, 4974.

Further argument that the insurance companies should not be represented on the Fire Brigade Committee, inasmuch as it is the owners of property who really, though indirectly, contribute in proportion to the amount insured, *Richardson* 5094–5098——Absence of complaint by the insurance offices as to their not being represented, or as to their paying too much, *ib.* 5102–5105.

Grounds for the conclusion that there is no good reason for the direct representation of the insurance companies on the Fire Brigade Committee, though they should pay more towards the cost of the brigade, *Thompson* 5342–5346.

Circumstance of the companies not being represented on the Board; doubt as to any advantage from their having a delegate at the Board, witness strongly objecting to fill this position, *Lovell* 6322, 6323. 6421, 6422. 6443——Doubt further expressed as to any good resulting from a limited representation of the companies at the Metropolitan Board, *ib.* 6476–6479.

Reiteration of witness' individual opinion that a minority representation of the companies at the Metropolitan Board would not practically benefit them; consideration of certain suggestions on this subject, *Lovell* 6484. 6514-6520. 6528–6542——Practical difficulty in the way of a satisfactory representation of the insurance companies, *ib.* 6542——Further statement that witness does not wish for any representation of the companies at the Metropolitan Board, though some of the offices are very desirous of being represented, *ib.* 6681.

Twofold reasons for objecting to a representation of the insurance offices at the Metropolitan Board, *Tomkinson* 6705–6707——Reference to the management of a fire brigade as a function foreign to the proper business of an insurance company, *ib.* 6748, 6749.

Insurance Companies—continued.

8. *Degree of Attention paid by the Metropolitan Board to Representations by the Companies:*

Belief as to all representations made by the companies receiving full consideration at the hands of Captain Shaw and of the Board, *De la Hooke* 3407-3409——Due attention paid by the Metropolitan Board to representations from the insurance offices, it not being expedient that the latter should have direct control in the management of the brigade, *Richardson* 5017-5021.

Representations made to the Metropolitan Board by the companies upon many points, but without obtaining any redress whatever; particulars hereon, *Lovell* 6322–6352—— Statement to the effect that witness is tired of making representations to the Board, no good having resulted, *ib.* 6427, 6428.

Dissatisfaction of the companies in that their recommendations to the Board have not been adopted upon any important questions, *Tomkinson* 6708, 6709——Four important points upon which the Board declined to adopt improvements urged by the insurance companies, *Swanton* 7352, 7353.

9. *Large Cost of Fire Insurance as compared with the Cost of Protection against Fire:*

Calculation showing that only 1 *d.* is expended annually in the protection of every 65 *l.* in value, whereas the expenditure for insurance is about 23 *d.*, *Captain Shaw* 1760.

See also *Bonded Warehouses. Bradford. Floating Engines*, 2. *Liverpool*, 4. *Manchester*, 4. *Salvage Corps. Stations. Uninsured Property. Water Supply.*

Interest on Loans. Explanation upon the question of deduction from the fire brigade revenue of the interest upon the loans on capital account, *Lushington* 465. 469-476.

Intermittent Supply. See *Hydrants. Water Supply.*

Isle of Dogs. The Isle of Dogs is about to have a station, *De la Hooke* 3264.

J.

Jurisdiction. Very large powers of the brigade at fires, *Lushington* 15–18. 22–24—— Transfer to the Metropolitan Board by the Fire Brigade Act of the powers previously entrusted to the local authorities in regard to the regulation of fire-plugs, &c., *De la Hooke* 2842–2845.

See also *Area. Metropolitan Board of Works.*

K.

Kelly, John. (Analysis of his Evidence, &c.)—Is a first-class fireman, attached to the floating station off Rotherhithe; total of six men and one officer attached to the float, 2454-2459——Occupation of from fifteen to twenty minutes in getting the float under weigh when called to a fire, 2460, 2461. 2533, 2534——Sufficient depth of water available for bringing the float close enough to river-side fires, 2462, 2463.

Concurrence in the evidence of Captain Shaw and other witnesess in favour of superannuation after twenty-five and after thirty years; effect thereof in inducing men to remain in the service, 2464–2471——Particulars as to the excessively long continuous hours of duty of witness and others in connection with the floating station, 2472–2492. 2513–2518. 2539–2547——Arrangement whereby one man out of six is generally spared to go to church on Sunday, 2493–2495——Pay of witness at the rate of 3 *s.* a day, there being no allowances, 2496–2498——Satisfaction of the men with their pay, their discontent being caused chiefly by the want of a superannuation scheme and the long hours of duty, 2499, 2500.

Complaint as to the great stagnancy of promotion; improvement expected if men had a right to retire on a pension after thirty years' service, 2501–2508. 2536–2538. 2548, 2549——Satisfaction to be given by Captain Shaw's scheme for promoting men after a certain service in each class, 2508–2512——Doubt as to the subsequent career of the men who now leave the brigade, 2519–2527—— Experience being gained by men attached to the floats so that they may take charge of a land steamer, 2528–2530——Absence of grievance in respect of clothes, 2531, 2532——Willingness of the men to contribute two-and-a-half per cent. of their pay towards superannuation, 2535.

Propulsion of the float to which witness is attached by the same boiler that works the pumps, 2551–2553——Explanation that the men who serve on the float live on shore, close by, and take their turn on the float, the fires being kept banked, 2554–2558, 2575–2583——

Kelly, John. (Analysis of his Evidence)—*continued.*

2583——Particulars as to the distances between the stations of the several floats, 2559–2574——Further statement as to the time required in getting the floats under weigh, and in arriving at fires, 2579–2587——Full supply of water for the floats; doubt whether this equally applies to the land engines, 2588–2594——Liability of the men attached to the float at Rotherhithe to be called off for service at the land station adjacent, 2595–2598.

Kennington Lane Station. Total of ten men attached to Kennington-lane station, there being three fire-escapes, and five men being available at night, *Port* 1992–1996——Disadvantage through there not being quarters at the station for all the men; difficulty especially as to married men, *ib.* 1997–2006. 2162–2164——Want of six more men at the station to give an occasional leave, and to allow each man to have one night off duty in the week, *ib.* 2007–2011——Practice of witness always to go with the engine when a fire is reported, two men being left at the station to do the best in their power in the event of a call to another fire, *ib.* 2012–2019. 2201, 2202.

Kent Waterworks Company. Inconclusive character of certain experiments with hydrants upon the mains of the Kent Water Company, *Freeman* 3968–3980——Favourable situation of the Greenwich and Woolwich districts for a constant supply at high pressure by gravitation, as given by the Kent Company, *Richardson* 4690–4693——Explanation as to hydrants not having been affixed to the constant supply mains of this company generally; data for the conclusion that the pressure could not be depended upon, *ib.* 4692–4713. 4728–4732——Doubt whether hydrants could supersede the use of engines in any part of the company's district, *ib.* 4707–4713.

Varying pressure from 20 lbs. to 48 lbs. in that part of the Kent Water Company's district, where there is constant supply, *Sir J. W. Bazalgette* 5593——Exceptional pressure in parts of the company's district, so that in such case hydrants may be found effectual to cope with fires, *ib.* 5646–5649.

Satisfactory height to which water was thrown from hydrants attached to the pipes of the Kent Waterworks Company at Deptford, *G. Shaw* 6235–6237.

Statement on the part of this company in 1866 as to the preparations made for giving a constant supply and as to the advantage of the system of hydrants, *App.* 671, 672.

King and Queen Granary (Rotherhithe). Satisfactory service rendered by the floating engine at the fire at the King and Queen warehouses in December 1871, *Captain Shaw* 1436–1441.

Comment upon the undue delay (about three quarters of an hour) before the steam floats arrived at the "King and Queen" granary fire, *Lovell* 6445, 6446——Reference to Mr. Swanton, of the salvage corps, as able to testify to the delay before the steam floats got to work upon the fire, *ib.* 6608–6613.

Statement in confirmation of Mr. Lovell's evidence as to the undue delay before the steam floats got to work upon the fire, *Swanton* 7054–7065. 7069——Further evidence as to the delay before the floats got to work upon the Rotherhithe fire in December 1871, witness submitting that the officer in charge of one of the floats reported the time incorrectly, *ib.* 7271–7281.

Report by Captain Shaw, dated 8th January 1872, replying in detail to certain statements made in a letter from Mr. Lovell on behalf of the insurance offices relative to the operations of the fire brigade at the fire in Rotherhithe-street, and the delay before the floating engines were brought into action, *App.* 688–691.

L.

Lambeth Waterworks Company. Quotation of a letter from Mr. Phipps on the part of the Lambeth Company in January 1875, as tending to show the difficulties on the score of pressure under a constant as well as an intermittent supply, *Richardson* 4684–4689——Varying pressure from ten pounds to seventy pounds in the Lambeth Company's district, *Sir J. W. Bazalgette* 5582.

Explanations and suggestions on the part of the company in 1866 upon the question of the water supply in reference to fires: objections to a constant supply at high pressure throughout the whole district, *App.* 670.

Leave of Absence (Hours of Duty). Absence of any regular leave on Sunday or during the week: expediency of the men having some time at their own disposal, *Hamlyn* 1955–1960; *Bull* 2402–2406. 2445–2447——Conclusion that the question of leave is generally in a very unsatisfactory state, and that there should be an addition of one man to each station, or about fifty men altogether, in order to admit of some concession on this point, *Richardson* 4645–4648. 4739.

Further evidence as to the men at the stations getting very little leave, though they may be seldom called to fires; dissent from the view that on this score there should be an

Leave of Absence (*Hours of Duty*)—continued.

an increase of 100 men instead of fifty, *Richardson* 4810-4831——Statement in favour of the men getting one day's leave every fortnight, an increase of about sixty or seventy men being necessary for this purpose, *Thompson* 5308. 5312-5316. 5364-5366.

Legislation. Several classes of Acts relating to the prevention of fires in the metropolis; reference especially to the Fire Protection Bill introduced by Mr. M'Lagan, *Lushington* 69. 77, 78.

Life, Protection of. See *Fire Escapes. Saving of Life.*

Liverpool:

1. *Fire Brigade; its connection with the Police.*
2. *Water Supply; good Pressure obtained.*
3. *Use of Hydrants, &c., as well as of Engines.*
4. *Salvage Corps; Contribution to the Cost of the Fire Brigade.*
5. *Number of Fires.*
6. *Number of Stations and Distribution of Force.*
7. *Warehouses.*
8. *Want of Floating Engines.*

1. *Fire Brigade; its connection with the Police:*

Special body of the police who form the fire brigade; doubt as to the cost, or as to the proportion of serious fires, *Captain Shaw* 1054-1058. 1075——Successful system at Liverpool, the firemen and police being one body, *Thompson* 5158.

Direct connection between the fire brigade at Liverpool and the police, 180 of the latter being selected and drilled for the purposes of the brigade; way in which these are distributed at the fire stations and throughout the town, *Yelland* 7466-7470. 7499-7508——Besides the 180 firemen, there are two engineers, a superintendent, and a deputy superintendent, *ib.* 7468——Extra pay of 2 *s.* per week of the fire brigade men as compared with the police; popularity and efficiency of the brigade, *ib.* 7509-7512. 7572——Inability of witness to supply details as to the cost of the Liverpool brigade and of the stations, &c., *ib.* 7547-7550. 7627-7632.

Responsibility of the Liverpool brigade to the head of the police, who is responsible to the watch committee, *Yelland* 7558. 7699-7701——Rate of pay in the police, 2 *s.* a week extra being given to men selected for the fire brigade, *ib.* 7565, 7566. 7703, 7704——System of superannuation in the brigade as part of the police, *ib.* 7570, 7571. 7623. 7708-7710.

Doubt as to more than seventy or eighty men being ever employed at one fire, the rest of the force being available for the town generally, *Yelland* 7578-7581——Training of policemen for fire brigade duties; efficiency attained, those who have been sailors being preferred, *ib.* 7587. 7644-7648.

Further information as to the division of police and fire duties among the fire brigade, and as to the number of men who might be withdrawn from the police at any time for fires, *Yelland* 7633-7643——Arrival of the brigade at any fire in about five minutes after receiving the call, *ib.* 7678-7682——Doubt as to fire brigade men being fully efficient up to fifty years of age, *ib.* 7705-7707.

Receipts and expenditure on account of the fire brigade for the year 1875, *App.* 697.

2. *Water Supply; good Pressure obtained:*

Belief as to the very high pressure available at Liverpool, *Richardson* 4931-4933——Particulars relative to the mode of introduction of the constant supply into Liverpool, and the advantages of the waste water meter there used; economy of supply owing to this check, *Bramwell* 5980-5986.

Constant supply of water in all the mains, *Yelland* 7474——Particulars relative to the pressure in the mains, this varying in different parts of the town according to the height; means of increasing the pressure in case of fire, *ib.* 7479. 7483. 7491-7498.

Acquaintance of the fireman with the water supply arrangements so that they can turn on the water, a turncock being rarely required save for increasing the pressure in the upper parts of the town, *Yelland* 7486-7492——Former purchase of the water supply by the corporation from the water companies; belief that there was no difficulty in buying them out, *ib.* 7573-7577.

Information as to the height or level of the Kensington Reservoir at Liverpool, and as to the pressure in the mains, the supply being by gravitation, *Yelland* 7585, 7586. 7654-7663. 7711-7716——Supply of water partly by pumping and partly by gravitation, there very seldom being a want of pressure, *ib.* 7685-7693.

Report, 1876—*continued.*

LIVERPOOL—continued.

3. *Use of Hydrants, &c., as well as of Engines:*

Appliances kept at the several stations for prompt use in the case of fire, there being a constant supply of water in the mains with hydrants attached, *Yelland* 7470–7475——Use of steam fire-engines only in case of very large fires, the hydrants with hose applied being found sufficient in the great majority of cases, *ib.* 7476–7483——Use of the ordinary screw hydrant, the cost being about 3*l.* or 4*l.*; they are frequently examined and never get out of order, *ib.* 7539–7544——Use of ladders and of a few fire-escapes by the police, *ib.* 7560–7562.

Impression that not more than two steam fire-engines have been at work at any fire, in addition to the hydrants and hose, *Yelland* 7582–7584——Importance of some engines in addition to the hydrants; necessity of a large increase of stations and of engines if there were not constant high pressure and a system of hydrants, *ib.* 7664–7668——Very rare use of an engine, though one is always sent, *ib.* 7683, 7684——Value of hydrants, even though the pressure may not be so strong as at Liverpool, *ib.* 7716——Particulars relative to the use of steam fire-engines and of hydrants, respectively, at the landing-stage fire, *ib.* 7717–7729.

4. *Salvage Corps; Contribution to the Cost of the Fire Brigade:*

Contribution made to the fire brigade at Liverpool, through the salvage corps there, *Lovell* 6450.

Operation of the salvage corps on the part of the insurance companies; voluntary contribution of 650*l.* a year by the companies towards the expense of the fire brigade, in return for which they have the use of engines and appliances for salvage purposes, *Yelland* 7513–7520——Charge made upon the owners when firemen are left in care of uninsured property after a fire, *ib.* 7521–7523——Hours of duty of the men in the salvage corps and in the brigade; allowance of one day's leave in the week to each of witness' men, *ib.* 7563, 7564. 7567–7569. 7649, 7650. 7702.

Similar functions of the salvage corps in Liverpool as in London; payment of the expense by the insurance companies, *Yelland* 7597–7604——Extent to which witness is consulted as to the establishment of new stations, &c., *ib.* 7605–7611. 7671–7674——Cost of from 2,200*l.* to 2,600*l.* a year incurred by the corps; large value of property sometimes saved, *ib.* 7612, 7613——Large number of auxiliaries sometimes employed under witness and the thirteen men forming the salvage corps, *ib.* 7649–7653.

Constitution of the salvage corps committee for the year 1876; several offices entitled to benefit by the service of the corps, *App.* 698.

5. *Number of Fires:*

Information relative to the total number of fires and of damages, in 1873, 1874, and 1875; increase from 312 fires in 1873, to 397 in 1875, *Yelland* 7530–7538. 7694–7698——Explanation that fires are not classed as serious in all cases of loss of life, *ib.* 7589–7594.

Report by the salvage committee for the year 1875; large increase of fires during the year, *App.* 695.

Return containing information in connection with the cause of each fire, and the amount of damage, *App.* 695–697.

6. *Number of Stations, and Distribution of Force:*

Prompt attendance at fires, the hose and reel stations being close to the warehouses and docks, and being speedily at work, so that large fires are comparatively few, *Yelland* 7524–7531——Large number of stations in proportion to the area; advantage in this respect as compared with London, *ib.* 7551–7557——Total of nineteen stations, the greatest distance between any two stations being about a quarter of a mile, *ib.* 7551–7556——Total of 180 men distributed over eight square miles, *ib.* 7551. 7557.

List of fire stations within the borough; regulation as to the residence or attendance of the men, *App.* 698.

7. *Warehouses:*

Statement relative to the numerous fires a few years since in the warehouses at Liverpool, and the important structural improvements since effected owing to the necessity otherwise of very high rates, *Lovell* 6502. 6508——Great reduction of rates since the improved warehouses have been in operation, *ib.* 6502——Very efficient inspection applied to the Liverpool warehouses, *ib.* 6502. 6504–6508——Explanation as regards the reduced mercantile rates, that the general public did not benefit thereby, *ib.* 6671–6674.

8. *Want of Floating Engines:*

Circumstance of there being no steam-floats at Liverpool; suggestions as to the kind of vessel desirable, *Yelland* 7595, 7596. 7614–7622. 7669, 7670.

Report, 1876—*continued.*

Lodging the Men. Assistance given to certain grades as regards lodgings, &c., *Captain Shaw* 256. 572, 573——Steps taken in order to lodge the men at the stations, this, however, not being always feasible; stipulation in such cases as to their living as near the stations as possible, *ib.* 551–560——Longer time occupied in turning out to fires when the men do not live in the stations; about three and a-half minutes suffice for turning out when the men live in the stations, *ib.* 560–567.

Advantage if all the men could be lodged in the stations, *Hamlyn* 1791, 1792. 1945, 1946——Slight delay caused in turning out for fires owing to three of witness' men not living in the station; average of three and a-half minutes as the time occupied, *Duck* 2298–2311.

Resolution adopted by the Metropolitan Board in November 1865, that, as a general rule, the men should be obliged to live at (not in) the stations to which they were attached, *De la Hooke* 2973, 2974. 2976, 2977——Decision in March 1868, upon the recommendation of Captain Shaw, that in future married men's quarters should not be provided for men below the second class, *ib.* 2974, 2975——Doubt as to the men having ever represented that it was a hardship to be obliged to live outside the stations, *ib.* 2982, 2983.

Recommendation by Captain Shaw, in February 1868, that firemen should not be provided with married men's rooms until they had been promoted to the second class, *De la Hooke* 3515–3517——Circumstance of some third-class firemen having petitioned, in 1871, upon the subject of married men's quarters, *ib.* 3518–3521.

Anxiety of the Board to provide lodging for the men at the stations, this being difficult on account of their families, *Freeman* 4011–4015——Small payment made by the first class towards the cost of their lodgings when not provided for them in the stations, *ib.* 4064–4072—— Saving of several minutes in turning out to fires if the men all lived in the stations, *ib.* 4373, 4374——Important improvement since 1869 by the provision of lodgings for the men in the new stations, *Thompson* 5200–5203.

Report by Captain Shaw, dated 1st March 1869, together with Table showing the arrangements at each station for married and single men respectively, the number of men lodging out, and their cost, *App.* 652, 653.

London Fire Engine Establishment (*Insurance Companies*). See *Insurance Companies*, 1.

London Salvage Corps. See *Salvage Corps.*

Lovell, George William. (Analysis of his Evidence.)—Is Secretary to the Phœnix Fire Office, and is Chairman of the London Salvage Corps, 6305, 6306——Provision in the London Fire Brigade Act as to the insurance companies contributing 35 *l.* for every million insured towards the extinction of fires, 6307, 6308——Strong objection to any increase of this contribution, witness submitting, on the other hand, that it should be sensibly reduced, as a large portion of it has been diverted to the protection of life from fire, with which object the companies have nothing to do, 6308-6311. 6318, 6319——Further ground for a diminution of the companies' contribution, on account of the abolition or removal of stations which had formerly been placed by the companies in the centres of property, 6309, 6310.

Conclusion that the protection of property from fire should be entirely a municipal obligation in London, as it is in Paris and elsewhere, 6309. 6312. 6324——Object of the brigade, as first established by the insurance companies, to protect insured property by limiting the range of fires, but not to protect the metropolis generally, 6310, 6311. 6318, 6319——Special agreement whereby the insurance offices in Manchester contribute to the cost of the fire brigade, 6313-6316. 6357, 6358. 6450. 6454.

Failure of witness' efforts to introduce a clause into the London Fire Brigade Act providing for the continued maintenance of the stations as established by the companies, 6317, 6318—— Frequent representations made by witness to the Metropolitan Board relative to the removal of stations, the excuse being that the Board has not sufficient funds to maintain them all, 6319, 6320. 6324-6328——Complaint as to the removal of the station from Farringdon-street to Clerkenwell, 6320, 6321. 6324. 6392, 6393.

Representations made to the Metropolitan Board by the companies on many points, but without obtaining any redress whatever, 6322–6352——Circumstance of the companies not being represented on the board; doubt as to any advantage from their having a delegate at the board, witness strongly objecting to fill this position, 6322, 6323. 6421, 6422. 6442, 6443——Interest of the parish representatives on the board in obtaining stations for their own localities, 6322. 6324. 6420——Exception taken to the proposed station at Shooter's Hill, so far as the interests of the companies are concerned, 6322–6420——Objection to the intended removal of the head quarters of the brigade from the City to Southwark, 6324. 6387–6391.

Grounds for complaint in reference to the removal of Wellclose-square station to the Commercial-road, 6325–6328. 6394.——Abolition temporarily of Waterloo-road station, 6325, 6326——Comments upon the unsatisfactory reasons given by the Metropolitan Board for not complying with applications made by the insurance companies in 1871 and 1872 for the use of some small steam floats, 6331–6342. 6423, 6424——Failure also of representations

Report, 1876—*continued.*

Lovell, George William. (Analysis of his Evidence)—*continued.*

representations with a view to a junction of the mains of the different water companies, 6343-6346.

Instances of great delay at fires in obtaining the attendance of the turncock, so that the companies suggested (but in vain) that a turncock should be kept at each brigade station, 6347, 6348——Considerable sum contributed by the companies to the cost of the brigade; claim to a reduced assessment, the money having been largely applied to purposes not contemplated by the companies, 6351, 6352. 6370. 6385, 6386 ——Conclusion further expressed that the cost of the brigade should be entirely a municipal charge in London, as it is in all other places, save Manchester, 6353-6356. 6452-6454.

Respects in which it is not merely the insurance companies who are interested in the extinction of fires; very few people who insure to the full value, 6359-6365——Statement as to the loss rate of the Phœnix Company being higher in London than elsewhere, 6365-6367——Doubt as to the proportion of serious fires in London having greatly diminished in the last few years; recent instances of some very large fires, 6367-6370. 6381 6382——Great difficulty, or rather impracticability, of suppressing fires at large warehouses or wharves, where there is an accumulation of combustible materials; instance in the case of the fire at Brooks' wharf, 6371-6380.

Effect of better precautions and of decrease of fires in inducing the public to insure for less amounts, to the prejudice of the companies, 6383, 6384——Considerable expenditure for life protection (estimated at about one-fourth of the total expenditure), whereas the companies should not be asked to contribute for this purpose, 6385, 6386. 6425, 6426. 6460-6463.——Special importance to the companies of effectual precautions close to the city warehouses and the docks, where property of immense value is concentrated, 6397. ——Enormous losses of insurance offices through the fire at Hamburg, *ib.*

Possibility doubtless of two or three very large fires in London on the same night, in which case the staff would be very insufficient; witness, however, is not aware of deficiency of staff at any fire, 6398-6406.——Total of about 540,000,000 *l.* represented by the property insured in London, 6407, 6408——Obstacle to any correct return of the annual losses paid by the companies within the metropolis, 6409, 6410——Difficulty in ascertaining the number of fraudulent fires; explanation as to the reluctance of the companies to take legal proceedings in these cases, 6411-6417.

Deprecation of the notion that the companies are not averse to small fires, and are careless about their prompt suppression, 6418, 6419——Statement to the effect that witness is tired of making representations to the Metropolitan Board, no good having resulted, 6427, 6428——Circumstance of no representation having been made relative to the pending removal of the central station, 6429-6432——Reliance formerly placed by the parishes, with some exceptions, upon the engines of the companies, 6433, 6434——Original establishment of fire escapes by a private society; subsequent transfer to the Metropolitan Board, 6435.

Further statement as to the outlying districts not possessing anything like the same interest for the companies as the large wharves and warehouses, whereas the latter are not so well protected as they used to be, 6436-6445——Abolition of two of the old stations of the companies, whilst two others have been removed, 6436. 6444——Inaccuracy of some evidence as to the larger portion of the insured property being in the suburbs, 6438, 6439.

Comment upon the undue delay (about three-quarters of an hour) before the steam floats arrived at the King and Queen Granary fire at Rotherhithe, 6445, 6446——Increased insurance rates charged for riverside property on account of the deficient water supply, 6445——Advantage of some small floats, drawing very little water, as they could arrive at fires much more quickly than the present large floats, 6446——Want of funds to which the non-provision of small floats has been attributed by the Metropolitan Board, 6447.

Establishment of the Salvage Corps by the companies upon the transfer of the firemen to the Metropolitan Board; duty of the corps to see exclusively to the protection of property, 6448, 6449——Option in the offices as to joining the corps, 6449——Contribution made to the fire brigade at Liverpool through the Salvage Corps there, 6450——Great expense involved in an inquiry into the origin of every fire, 6451.

Misleading effect of any return of the annual losses of the companies; very long period over which any average of losses should be taken, 6455-6459——Abundant protection afforded in the outskirts, whilst the large risks in the city are not sufficiently protected, 6464-6467——Comment upon the proposal that the companies should contribute more instead of less, witness further contending that they should not contribute at all, 6468-6470——Undue rate paid by the offices as compared with the public rate, 6469.

Entire erroneousness of the view that insured property becomes the property of the companies in the event of fire, 6471-6475——Special condition in the policies as to the companies having access to the property, 6472——Doubt further expressed as to any good resulting from a limited representation of the companies at the Metropolitan Board, 6476-6479.

Report, 1876—*continued.*

Lovell, George William. (Analysis of his Evidence)—*continued.*

[Second examination.] Statement in further refutation of the theory as to insured property belonging to the companies, 6480-6482——Witness further submits that in principle the fire brigade should be a municipal charge exclusively, and that if it be proposed to increase the companies' contribution the whole question as to the support of the brigade should be re-opened, 6483. 6485-6501.

Reiteration of witness' individual opinion that a minority representation of the companies at the Metropolitan Board would not practically benefit them; consideration of certain suggestions on this subject, 6484. 6514. 6520. 6528–6542——Explanation as to the companies not having objected at the time of the transfer to contribute to the cost; twofold increase of the contribution with increase of business, 6485–6488——Object of the companies mainly to limit the range of large fires, whilst the Board look to the protection of all the metropolis, 6485. 6489–6491. 6500, 6501.

Compromise involved in the undertaking by the companies to contribute at the rate of 35 *l.* for every million of insured property, 6491. 6500, 6501——Increase of mercantile rates through increase of mercantile fires, as in Tooley-street; economy on the other hand to the mercantile public by such fires being kept under by the municipal authority, 6492–6499.

Statement relative to the numerous fires a few years since in the warehouses at Liverpool, and the important structural improvements since effected owing to the necessity otherwise of very high rates, 6502. 6508——Great reduction of rates in Liverpool since the improved warehouses have been in operation, 6502——Very efficient inspection applied to the Liverpool warehouses, 6502. 6504–6508.

Reduced rates for the large wharves in London after an improved classification of goods had been adopted, 6503——Increase of premium when losses are heavy, whilst there is a prompt reduction when there is a decided improvement, 6509.

Willingness of the companies to continue the present rate of contribution, if there be no diversion for the protection of life, &c., and if their representations to the Metropolitan Board receive proper attention, 6510–6513——Distinct interest of the companies as compared with that of the parishes having representatives at the Board, 6514.

Action taken by the offices forming the London Salvage Corps, with a view to their representation before the present committee, 6521–6524——Belief that none of the companies are in favour of increasing the amount of contribution, 6525–6527——Interest of the companies to maintain a fire brigade, if there were not a public brigade; the stations would be placed only where there are large accumulations of property, 6534–6538.

Practical difficulty in the way of a satisfactory representation of the insurance companies at the Metropolitan Board, 6542——Explanation that the companies do not desire the occurrence of small fires, though they might not take special steps for their prevention, 6543–6545.

Duty doubtless of the Metropolitan Board to protect the outlying districts, such as Shooter's Hill, though the contribution by the companies should not be diverted for such purpose, 6546–6551. 6557–6560. 6645–6647——Belief that it was fully understood, when the brigade was transferred, that the more central stations should all be maintained, though there may have been no written stipulation on the subject, 6552–6557——Probability of the closing of the Waterloo Road Station not having caused much alarm among the insurance offices, 6561–6569.

Examination with further reference to the grounds of witness' objection to the removal of the Wellclose-square Station to the Commercial-road, 6570–6595——Further statement in regard to the refusal by the Metropolitan Board to provide some small steam-floats; on this point witness withdraws some comments made upon the Board in his former examination, 6566–6607. 6614–6619——Reference to Mr. Swanton of the Salvage Corps as able to testify to the delay before the steam-floats got to work upon the fire at the King and Queen Granary, 6608–6613.

Harmonious co-operation of the firemen and the Salvage Corps, 6620——Probability of the expenditure for fire-escapes and life protection being not more than one-sixth instead of one-fourth of the total expenditure, 6621–6630——Explanation that witness, as chairman of the Salvage Corps, is not responsible for nor conversant with details, 6639——Assistance given by the Fire Brigade Committee of the Metropolitan Board to the insurance offices, with a view to the discovery of incendiary fires, 6632–6634.

Grounds for former statement as to the offices paying in a much greater ratio than the public, 6635–6639——Objection further raised as regards the removal of the Farringdon-street Station to Clerkenwell, 6640–6644——Further statement as to the antagonism of interests between the offices and the Metropolitan Board, the former contending for stations where there are accumulations of insured property, and the latter having in view the protection alike of all parts of the metropolitan area, 6645–6652. 6658, 6659.

Willingness of the companies to continue their present rate of contribution if they get fair value for it, 6653——Reduced risks of large fires in Paris owing to the improved construction of the warehouses, 6655——Belief as to the Metropolitan Board having tried, without success, to pass a Bill for improving the construction of warehouses, 6656, 6657.

Report, 1876—*continued.*

Lovell, George William. (Analysis of his Evidence)—*continued.*

Financial position of the Phœnix Company; varying dividends paid, 6660-6663——Different rates charged for movable property and for buildings; refusal by the Phœnix Company to insure public warehouses, 6664-6668——Special arrangement under which, both in Liverpool and Manchester, the insurance offices contribute to the cost of the fire brigades, whilst in London the contribution is compulsory under Act of Parliament, 6669, 6670.

Explanation as regards the reduced mercantile rates at Liverpool, that the general public did not benefit thereby, 6671-6674——Dissent from certain arguments purporting to show that the offices, as making a profit out of the insurance of movable property, should in fairness contribute towards the protection of such property, 6675-6680.

Further statement that witness does not wish for any representation of the companies at the Metropolitan Board, though some of the offices are very desirous of being represented, 6681——Less protection of crowded districts since the removal of some of the stations, as the engines cannot arrive so promptly at fires, 6682, 6683.

Lushington, Godfrey. (Analysis of his Evidence.)—Is Counsel to the Home Office and is prepared to give a summary of the legal history of the Metropolitan Fire Brigade, 1, 2——Establishment of the brigade under the Act 28 & 29 Vict. c. 90, the duties being vested in the Metropolitan Board of Works, 3. 5——Parochial arrangements previously in force, there having been also a fire brigade maintained voluntarily by the insurance companies, 3, 4——Jurisdiction as regards the brigade over the metropolis area, this being much smaller than the metropolitan police district, 6.

Special powers under which services may be rendered by the fire brigade outside the metropolitan area, payment being made for such services, 7–9——Treasury contribution of 10,000 *l.* a year towards the expenses of the brigade, 9——Contribution by the insurance companies at the rate of 35 *l.* for every million assured, *ib.*——Support of the brigade chiefly by a halfpenny rate levied over the area of the Metropolitan Board, *ib.*——Payments received by way of penalties (not exceeding 20 *s.*) from owners or occupiers in respect of chimneys on fire, 9. 70.

Power of the Metropolitan Board, with the consent of the Treasury, to create consolidated stock for the provision of permanent plant, &c., 9–11——Powers of the Board with a view to the efficiency of the brigade; complete control in the appointment and dismissal of officers, their salaries, discipline, &c., 12–14——Very large powers of the brigade at fires, 15–18. 22–24——Provisions of the Fire Brigade Act by which the duties of the police in reference to fires are regulated; general orders issued on the subject, 19–21.

Authority of the brigade to deal with the fire-plugs and hydrants of the water companies; explanation hereon as to the obligation upon the companies, and as to the powers in the Board under the Fire Brigade Act in regard to the provision of fire-plugs, 22–42——Obligation upon the companies to supply the Board with underground plans of their mains, showing where the screw-cocks are placed, 24——Necessary reliance of the fire brigade upon the companies' turncocks for obtaining supplies of water at fires, 24——Duty of the brigade to hand over to the salvage corps the property saved from fire, 43, 44.

Provisions in the Metropolis Water Act of 1852 defining the area of the water companies, prohibiting the in-take of water below Teddington Lock, and facilitating a constant supply; this Act did not refer to any local authority in the metropolis, 46–50——Adoption of the same area by the Metropolis Water Act of 1871 as by the Act of 1852, whilst certain duties were laid upon the Corporation and the Metropolitan Board as the local authorities. 51–53——Explanations in connection with the provisions of the Act of 1871 upon the subject of a constant supply, the regulations as to the cost of fittings, &c., 54–68.

Several classes of Acts relating to the prevention of fires in the metropolis; reference especially to the Fire Protection Bill introduced by Mr. M'Lagan, 69. 77, 78——Several Building Acts adverted to in connection with the present inquiry; reference especially to a Bill for consolidating the different Acts, and containing provisions as to the storage of dangerous substances, &c., 72, 73——Elaborate and comprehensive character of the Explosive Act of last Session, 74–76——Reference to the Public Health Act as containing provisions relating to the prevention of fire in the provinces, 78–81.

Option in the Metropolitan Board as to the brigade rendering assistance outside the metropolitan area; practice as to charging for such assistance, 83. 86——Further statement as to the authority of the Board, with the consent of the Treasury, in regard to the creation of consolidated stock for the provision of station-houses, fire-engines, &c., 84, 85. 88, 89. 92–98——Formation of a salvage corps adverted to as being entirely optional, though, if formed, it is to receive every assistance from the Metropolitan Board, 90, 91.

[Second Examination.]—Similar sources for the maintenance of the fire brigade since its transfer to the Metropolitan Board, save that the halfpenny consolidated rate has been substituted

Report, 1876—*continued.*

Lushington, Godfrey (Analysis of his Evidence)—*continued.*

substituted for the halfpenny poor's rate formerly levied for the purposes of the brigade, 427—— Explanation that witness' evidence as to the capital and the borrowing powers of the Board in respect of the brigade will probably require expansion and correction from other quarters, 428-430.

Reference to the 6th section of the Fire Brigade Act of 1865 as showing the conditions under which the stations, engines, &c., of the insurance companies were transferred to the Board, 431-434. 465——Authority of the Board under the 6th section of the Act to purchase the stations and plant belonging to the parishes, 437——Power of the Board under the Act of 1865, with the consent of the Treasury, to borrow up to 40,000 *l.*; conclusion as to this having been intended for capital expenditure, 437-439. 465—— Absence of any further borrowing powers till the Metropolitan Loans Act of 1869; 440, 441.

Effect of the Loans Act of 1899 in creating a complete change in the financial operations of the Board; special conditions as regards the exercise of borrowing powers for the purposes of the fire brigade, 442-444——Limit of 10,000,000 *l.*, at which the borrowing powers of the Board were placed by the Act of 1869; explanation as to this amount having been based on an estimate which included 50,000 *l.* for the fire brigade, in addition to the 40,000 *l.* previously authorised, 445-449. 465, 466——Capital expenditure of 75,000 *l.* under the Act of 1869, the total expenditure up to the Loans Act of 1875 having been 115,000 *l.*; 450.

Large margin of borrowing powers under the Act of 1869, which might be legally have been applied to fire brigade purposes; necessary sanction, however, of the Treasury before any loans could have been raised for the brigade, 451, 452. 457-460. 465-491 ——Main object of the Loans Act of 1875 to require an annual Parliamentary budget in reference to loans for fire brigade and other purposes; authority under the Act to borrow an additional sum of 15,000 *l.* for plant, &c., up to 31st December 1876; 452-457. 461-466. 482——Explanation upon the question of deduction from the fire brigade revenue of the interest upon the loans; since the Act of 1869 there is no power to make such deduction, 465. 469-476.

M.

Machinery. Increased risk of fire owing to the increased application of machinery, *Tomkinson* 6763.

Mains (*Water Supply*). Circumstances of two-thirds of the streets of London being without mains; difficulty on this score as to the water supply at fires, *Sir J. W. Bazalgette* 5662-5664.——*See* also *Hydrants. Water Supply.*

Management of Brigade. Objection to a transfer of the brigade to the metropolitan police, the present management being efficient and economical, *Freeman* 4133, 4134. 4151, 4152. 4399, 4400. 4436-4443—— Grounds for concluding that the Government, and the insurance companies, though contributing to the cost, should not be represented in the management, *ib.* 4135-4150.

Evidence in support of the conclusion that the insurance offices should not take part in the management, *Richardson* 4753, 4754. 4973, 4974. 5094-5098. 5102-5105; *Thompson* 5343-5346——Large discretion allowed to Captain Shaw in matters of detail, the Fire Brigade Committee exercising such control as is desirable in the interests of the ratepayers, *Richardson* 5032-5047——Practice of consulting Captain Shaw before any important change is made in the management of the brigade, *ib.* 5099-5101.

Objections on the part of the insurance companies to being represented in the management, *Lovell* 6322, 6323. 6421, 6422. 6443. 6476-6479. 6484. 6514-6520. 6528-6542. 6681.; *Tomkinson* 6705-6707. 6748, 6749.

See also *Discontent. Efficiency of the Brigade. Fire Brigade Committee. Insurance Companies*, 7. *Metropolitan Board of Works. Police*, 8. *Strength of the Brigade. Superannuation.*

MANCHESTER:

1. *Fire Brigade; Connection with the Police.*
2. *Water Supply; successful Introduction of a constant Service, and excellent Pressure with reference to Fires.*
3. *Hydrants; their successful Operation.*
4. *Cost of the Brigade; Contribution by the Insurance Offices.*
5. *Recruiting for the Brigade.*
6. *Hours of Duty of the Men.*
7. *Superannuation.*
8. *Fire Escapes.*
9. *Hand Pumps.*

1. *Fire*

MANCHESTER—continued.

1. *Fire Brigade; Connection with the Police:*

Connection between the brigade at Manchester and the police, *Gunn* 5507–5509——Management of the brigade by the Watch Committee (which body also manages the police), there being one superintendent and fifty men, *Tozer* 6765, 6766. 6922, 6923——Total of sixteen stations, nine of which are also police stations, whilst at four of the stations the men reside, *ib.* 6767. 6782–6786. 6885, 6886.

Valuable assistance rendered by the police at fires; advantage in their being under the orders of the superintendent of the fire brigade, *Tozer* 6768, 6769. 6775. 6794, 6795. 6823–6825. 6918–6923——Services rendered by the brigade in the suburbs, *ib.* 6779–6781——Much smaller staff in London than in Manchester, in proportion to the area served in each case, *ib.* 6834–6839——There is no salvage corps, the fire brigade acting in that capacity, *ib.* 6883, 6884.

2. *Water Supply; successful Introduction of a constant Service, and excellent Pressure with reference to Fires:*

Result of some experiments at Manchester, in order to ascertain the height to which jets may be thrown under different conditions as to pressure and size of the hose, *Sir J. W. Bazalgette* 5613. 5615–5621——Satisfactory pressure at Manchester for the efficient working of hydrants, *ib.* 5685–5687——Single system of supply, the mains being all large, *ib.* 5779, 5780.

Facilities for greatly increasing the pressure at Manchester, there being four reservoirs, the mains from which can be used to assist each other in the event of fire, *Tozer* 6770–6778. 6875–6882. 6900–6905. 6934–6949——Increased staff required, and increased expense of the water supply at Manchester if the service were intermittent, *ib.* 6852–6854.

Great facility in substituting the constant for the intermittent system, the change having been made by sections at a time, *Berrey* 7362–7364——Great saving of water through the adoption of a constant supply; reduction of from thirty-eight to twenty gallons per head in the daily consumption, *ib.* 7366, 7367.

Small expense in the alteration or repair of house fittings for the purposes of a constant supply, average charge of from 13 *s.* to 11 *s.* per house, *Berrey* 7368. 7371, 7372. 7462, 7463——Careful inspection after the application of the constant system, any waste having been at once remedied, *ib.* 7368——Excellent pressure at Manchester, the supply being by gravitation; elevation of the several reservoirs, *ib.* 7386. 7394–7399. 7427.

Total cost of 2,500,000 *l.* represented by the Manchester Waterworks, including the works purchased from the late water company, *Berrey* 7424. 7459–7461——Particulars as to the charge for domestic and trade purposes respectively, *ib.* 7425, 7426. 7442——Exceptional instances or deficient supply of water, 7448, 7449.

Facilities in dealing with the pressure, through there being several zones of supply, *Berrey* 7453–7455——Arrangement now in force for detecting waste from the ball-tap under the constant supply, *ib.* 7457, 7458.

3. *Hydrants; their successful Operation:*

Successful operation of hydrants, there being a satisfactory pressure by gravitation, and the whole water supply being under municipal control, *Freeman* 3945, 3946. 3960, 3961——Striking illustration of the value of hydrants in the case of Manchester, the corporation, however, having the water under their entire control, *Richardson* 4695–4700. 4715. 4790.

Doubt as to the hydrants at Manchester having been found defective in working, *Sir J. W. Bazalgette* 5774, 5775——Doubt as to the number of fire engines maintained at Manchester and Liverpool, in addition to hydrants, *Easton* 6158–6160.

Excellent pressure at Manchester, so that at very few fires are the engines required, the system of hydrants and of attaching hose being found very effectual, *Tozer* 6770–6778——There are about 300 fires yearly, and at only three per cent. are engines used, *ib.* 6770. 6775——Comparatively few serious fires, owing to the great facilities for checking them when they break out, *ib.* 6773–6775. 6832, 6833. 6954–6956——Use of about 10,000 hydrants or fire-cocks in Manchester and of about 7,000 in the suburbs, *ib.* 6777, 6778.

Small cost of hydrants, as laid down at Manchester; they are placed upon the main direct, without any connecting pipe, *Tozer* 6808–6812——Satisfactory operation of the Bateman ball valve, *ib.* 6813–6818. 6916, 6917——Average distance between the hydrants; they are closer together accordingly as the property is more valuable, *ib.* 6819, 6820——Very rare occurrence of serious fires owing to the facilities for their suppression, *ib.* 6855–6857. 6954–6956——Belief that there are very few private hydrants, *ib.* 6892–6895.

Entire efficiency of the hydrants at Manchester, the Bateman and Moore hydrant working very smoothly and satisfactorily, *Berrey* 7374–7378——Average cost of 30 *s.* for each hydrant laid down upon a new main, the cost being 45 *s.* when laid upon a main already under ground, *ib.* 7379–7381——Very few fires at which engines are used, the hydrants being everywhere available instantaneously, so that serious fires rarely occur, *ib.* 7399–7405.

Report, 1876—*continued.*

MANCHESTER—continued.

4. *Cost of the Brigade; Contribution by the Insurance Offices:*

Evidence in detail relative to the system at Manchester, whereby the insurance companies and the owners of uninsured property contribute towards the expenses of fire extinction; provisions on the subject in the Manchester Police Regulation Act, *Gunn* 5477-5488——Annual cost of the brigade, and proportion borne by the insurance offices and the owners of uninsured property, *ib.* 5499-5506——Special agreement whereby the insurance offices contribute to the cost of the fire brigade, *Lovell* 6313-6316. 6357, 6358. 6450. 6454.

Charge made upon uninsured property for the services of the brigade; that is, when there is a *bonâ fide* service, *Tozer* 6950-6953——Arrangement also with the insurance offices, whereby the latter compound for the insured portion of the property, *ib.* 6950.

Comment upon the increase of insurance rates, whilst fires are so promptly suppressed; reference hereon to the contribution by the companies towards the expense of the brigade, *Berrey* 7428-7432.

5. *Recruiting for the Brigade:*

Information relative to the recruiting and drill in the brigade, labourers as well as sailors being enlisted; usefulness of the latter, though witnes objects to their exclusive employment, *Tozer* 6859-6868. 6872. 6910-6915. 6927-6933.

6. *Hours of Duty of the Men:*

Information relative to the hours of duty of the Manchester Brigade, and of the leave of absence allowed to the men; there are no complaints, *Tozer* 6840-6851. 6887-6891. 6906-6909. 6924-6926.

7. *Superannuation:*

Satisfaction given by the superannuation now in force; particulars hereon, *Tozer* 6850, 6851. 6869-6871.

Tabular statement explanatory of the pay and superannuation allowances of the brigade, *App.* 683.

8. *Fire Escapes:*

Facilities for taking the hose to fires; advantage in the fire-escapes being supplied with hose, and being on duty in the day as well as at night, *Tozer* 6787-6790.

9. *Hand Pumps:*

Extinction of a considerable number of fires by means of small hand pumps, *Tozer* 6775. 6828-6832.

Manual Engines. Adoption of Captain Shaw's recommendation at the time of the transfer of the brigade, for providing ten new manual engines, *De la Hooke* 3224-3231.

Recommendation by Captain Shaw, under date 3rd December 1868, for the provision of forty-six small engines to be drawn and worked by hand, each with hose and other gear complete, *App.* 616.

Total of 102 manual engines proposed by Captain Harris; names of stations where they should be kept, *App.* 692, 693.

See also *Engines.* *Strength of the Brigade.*

Map (*Fire Brigade Stations, &c.*). Map of London, setting out the different stations of the fire brigade, the police stations, and the boundaries of the several water companies, *App.* 601.

Martin, Stephen. Pension of 15*s.* a-week in the case of Stephen Martin, a fireman, whose health failed after thirty years' service, *Captain Shaw* 773-778; *De la Hooke* 3026, 3027.

Marylebone. Large area and population of Marylebone adverted to in connection with the number of fire brigade stations in the district, *Captain Shaw* 1587-1591.

Medical Attendance. Medical attendance provided for the men of the brigade, free of cost, *Captain Shaw* 988.

Metropolitan Board of Works. Reference to the Act 28 & 29 Vict. c. 90, as establishing the brigade under the Metropolitan Board of Works, *Lushington* 3. 5——Powers of the Board with a view to the efficiency of the brigade; complete control in the appointment and dismissal of officers, their salaries, discipline, &c., 12-14.

Transfer to the Board, by the Fire Brigade Act, of the powers previously entrusted to the local authorities in regard to the regulation of fire-plugs, &c., *De la Hooke* 2842-2845 —— Belief as to all representations made by the insurance companies receiving full consideration at the hands of Captain Shaw and of the Board, *ib.* 3407-3409.

Denial that there has been a dereliction of duty on the part of the Metropolitan Board in not pressing for further taxing powers, in order to increase the strength of the brigade, though

Metropolitan Board of Works—continued.

though the Board would be glad to get rid of the limit of the halfpenny rate, *Freeman* 3928–3938——Opinion as to the expediency of the brigade remaining under the Metropolitan Board instead of being transferred to the police; taxation and representation should go together, *ib.* 4133, 4134. 4151, 4152. 4399, 4400. 4436-4443——Ready acceptance of charge of the fire brigade by the Metropolitan Board, at the request of the Home Office; probable reason why the charge was not entrusted to the police, *ib.* 4339–4345. 4357.

Due attention paid by the Metropolitan Board to representations from the insurance offices, it not being expedient that the latter should have direct control in the management of the brigade, *Richardson* 5017–5021——Readiness of the Metropolitan Board to carry out any work which they consider is for the interests of the metropolis, without being deterred by the fear of any odium, *Thompson* 5333-5335.

Representations made to the Metropolitan Board by the insurance companies upon many points, but without obtaining any redress whatever; particulars hereon, *Lovell* 6322–6352——Statement to the effect that witness is tired of making representations to the Metropolitan Board, no good having resulted, *ib.* 6427, 6428——Dissatisfaction of the companies in that their recommendations to the Board have not been adopted upon any important questions, *Tomkinson* 6708, 6709.

Four important points upon which the Metropolitan Board declined to adopt improvements urged by the insurance companies, *Swanton* 7352, 7353.

See also *Cost. Efficiency of Brigade. Fire Brigade Committee. Floating Engines*, 2. *Gratuities and Pensions. Hours of Duty. Hydrants. Insurance Companies. Management of the Brigade. Police*, 8. *Rate. Stations. Strength of the Brigade. Superannuation. Water Supply.*

Military, The. Disapproval of soldiers being called upon to assist the brigade, *Port* 2184–2188.

Morris, James. (Analysis of his Evidence.)—Is a second-class fireman at the Camberwell station, 2599——Staff of four men and an officer attached to this station, there being two manual engines, 2600–2603——Necessity at times of taking all the available men away, and of closing the station, 2604–2609. 2649–2669——Great importance of a superannuation scheme, in order to make the men more contented with the service, and to prevent their leaving the brigade for other employment, 2610-2613. 2670-2681. 2714–2717.

Slowness of promotion in the brigade; impetus to be given by a satisfactory superannuation scheme, 2614-2617. 2632–2648. 2718-2736. 2758-2763——Particulars relative to the excessive hours of duty of witness, and the other men at the Camberwell station; average of about sixteen hours daily, whilst they are always liable to be called out, and witness has recently been on duty for a week without taking his clothes off, 2618–2631. 2682–2687. 2693–2697. 2705–2713. 2743–2757——Satisfaction generally with the pay, if there were a superannuation scheme, and if promotion were more rapid, 2635–2648.

Opinion, that after a certain length of service, such as twenty-five years, there should be a claim to a pension irrespectively of misconduct, unless it were gross misconduct, 2670–2681——Resignation of many men in order to go to sea, and to enter other employ, 2688–2692. 2698–2704. 2714–2717. 2724–2736——Satisfactory relief from excessive duty if there were 200 more men without any increase of stations and fire escapes, 2737–2742.

Explanation that witness has only one night in bed out of four, but sleeps at other times in his clothes, 2743–2757——Similar duty on Sunday as on other days, save that there is not so much cleaning done on Sunday, 2745——Way in which men are now induced to remain unduly long on the brigade through the absence of any claim to a pension, 2758-2763.

N.

New Cross. Advantage if there were a fire-brigade station at New Cross, *Hamlyn* 1890–1892.

New River Company. Conditions as to constant supply in the case of the New River Company, as to high service being charged for, and as to the provision of cisterns; stipulation for a pressure of seventy feet above the pavement, *Bramwell* 5833——Uusefulness of hydrants in the low lying districts of the company, *ib.* 5883. 5888, 5889——Advantage of the company laying arterial mains in the city, so as to give an adequate pressure upon the pipes, *ib.* 5890.

Information obtained from the New River Company as to the sufficiency of the pressure in the service-pipes in the City, for the working of hydrants, *G. Shaw* 6175——Great pressure at which the company could supply, but for the injury to house pipes, *ib.* 6175. 6263–6265.

Report, 1876—*continued.*

New River Company—continued.

Explanations and suggestions on the part of the company in 1866, upon the question of the water supply in reference to fires; objections to a constant supply at high pressure throughout the whole district, *App.* 669.

New York. Force of 600 in the New York brigade, the annual expenditure being 185,000 *l.*, *Captain Shaw* 1754.

Northumberland Avenue. Intention to lay down hydrants in Northumberland Avenue, as well as along Shoreditch; prospect of magnificent buildings being erected in the Avenue, *Thompson* 5386-5389——Different prices of hydrants laid down down in Northumberland Avenue, *Sir J. W. Bazalgette* 5732, 5733.

Number of Fires. Annual number of fires (exclusive of chimney fires) in the period 1866-75; total of 1,338 in the former year, and of 1,529 in the latter, *Captain Shaw* 128——Large increase in the number of fires, though they have diminished in the last two years, *ib.* 642-644.

Statistics as to the number of fires during the last ten years, and at different hours of the day; total of 15,907, *Captain Shaw* 1282-1290; *App.* 633——Monthly, weekly, and daily summaries of fires for the ten years from 1866 to 1875, *App.* 637, 638.

Number of Men. See *Strength of the Brigade.*

O.

Old Kent Road Station. Total of six men under witness, including those required for working two fire escapes attached to the station, *Duck* 2277-2279. 2312, 2313——Necessity of taking three men out with each steam engine to a fire, only one man being left available in the event of a second fire, *ib.* 2280-2286.

Overwork. See *Hours of Duty. Strength of the Brigade.*

Owners of Property. Conclusion as to owners now contributing, indirectly, through the insurance offices, *Richardson* 5094-5098——If all property were insured the owners should pay the entire cost of the fire brigade, *ib.* 5098.

Argument that owners of uninsured property should in fairness pay for the cost of protection, *Gunn* 5477. 5481. 5490-5498. 5510 5553-5556.

Grounds for strongly objecting to the principle adopted in Manchester and other towns, whereby the owners of property attacked with fire are liable for contribution to the local fire brigades, *Tompkinson* 6729-6734. 6738, 6739. 6742-6744.

See also *Huddersfield.*

P.

Paddington Station (*Fire Brigade*). Particulars relative to the staff and hours of duty at the Paddington station of the brigade, as showing that there is no actual overwork, and that there are facilities for rest if properly utilised by Captain Shaw, *Freeman* 3897-3906. 4078-4099.

Pantechnicon. Doubt as to the engines having been late in arriving at the Pantechnicon fire, or as to a deficiency of men having been experienced, *De la Hooke* 3674-3685. 3692. 3841, 3842——Result of inquiry by witness, as regards the fire at the Pantechnicon, that there was no ground for complaint as to the time of arrival of the engines, *Freeman* 3923-3927. 4121-4124——The first engine to arrive was a volunteer one, *ib.* 3926. 4121, 4122.

Rapid arrival of the engines at the Pantechnicon fire, witness attributing no blame in connection with this fire, *Swanton* 7112-7127——Correction of portion of Mr. Swanton's evidence relative to this fire, *Captain Shaw* 8091.

Paris. Force of about 1,600 pompiers in Paris, who act also as soldiers, *Captain Shaw* 1068, 1069——Support of the establishment in Paris entirely from municipal sources, *Lovell* 6312——Reduced risks of large fires, owing to the improved construction of the warehouses, *ib.* 6655.

Parishes (*Engines, Staff, &c.*). Maintenance of engines formerly by some of the parishes; very little use of many of these, *Captain Shaw* 105——Authority of the Metropolitan Board, under the 6th section of the Act, to purchase the stations and plant belonging to the parishes, *Lushington* 437.

Several stations taken over from the parishes, *De la Hooke* 3224, 3225——Compliance with Captain Shaw's suggestion in December 1866, that the parish engineers be appointed engineers in the brigade, *ib.* 3232——Absence of any understanding that the Board were to take into consideration previous service under the parishes, *ib.* 3759-3762.

Report, 1876—*continued.*

Parishes (*Engines, Staff, &c.*)—continued.

Reliance formerly placed by the parishes, with some exceptions, upon the engines of the insurance companies, *Lovell* 6433, 6434.

Communications from Captain Shaw in June 1866, upon the subject of the purchase of the parish engines, and the insufficiency generally of the stock of engines, *App.* 602, 603.

List of parish engines which the Metropolitan Board had agreed to purchase, as at 27th June 1866, *App.* 602.

Report by Captain Shaw to the Metropolitan Board in December 1866, recommending, among other things, that certain parish firemen in the service of the Board be promoted to the rank of engineers in the brigade, *App.* 604, 605.

Party Walls. Check to the spread of fires if party walls were carried above the gutter plate, *Port* 2227–2232.

Pay (*Wages of Firemen, &c.*):

1. *Particulars as to the Rates of Pay, and the Increase therein since the transfer of the Brigade.*
2. *Satisfaction generally of the Men on the Score of Pay.*

1. *Particulars as to the Rates of Pay, and the Increase therein since the transfer of the Brigade:*

Rate of pay of the men in the different grades of the service; important increase since the transfer of the brigade to the Board, though hardly in proportion to the increase in the cost of living, *Captain Shaw* 255–260——The fourth class men receive 3 *s.* 6 *d.* a day, the third class 4 *s.*, the second class 4 *s.* 6 *d.*, and the first class 5 *s.*, *ib.* 255——Comparative rates of pay in the police and in the brigade, *ib.* 261, 262——Explanation that in the old brigade the first and second-class men got fire rewards in addition to their pay, and that these men received as much on the whole as they now do, *ib.* 718–737.

Table showing the original and increased rate of wages of the several classes, with the per-centage of increase in each class, *Captain Shaw* 978–981——Increase of about 50 per cent. for wages if the force be increased by 200 men, and if promotion take place after two years in each class, *ib.* 1345–1348——Higher pay of firemen than of policemen, the fourth class receiving however only 6 *d.* a week more than the lowest class of policemen, *ib.* 1394–1396.

Inability of the men to save anything out of their wages, *Duck* 2346——Pay of witness, as a first-class firemen, at the rate of 5 *s.* a day, there being no allowances, *Kelly* 2496–2498.

Adoption of Captain Shaw's recommendations in January 1867 as to the pay and promotion of third-class firemen, *De la Hooke* 3233——Adoption by the Board of every recommendation made by Captain Shaw relative to the pay of the men (save in the case of the superintendents), *ib.* 3390.

Considerable opposition at the Board when the proposal for an increase of pay was made, *Richardson* 4930——Very large increase in the charge for wages since 1866, *Gunn* 5468, 5469——Explanation as to the relative charge for wages, and for other expenses generally in 1867 and in 1875, *ib.* 5557–5566.

Representation by the third-class firemen in January 1867 as to the inadequacy of their weekly pay of 1 *l.* 1 *s.* per week, *App.* 605.

Recommendation by Captain Shaw, dated 14th January 1867, for improving the position of the third-class men, *App.* 605, 606.

Particulars as to the arrangements in force since 1st October 1865 upon the subject of pay and pensions, *App.* 686, 687.

2. *Satisfaction generally of the Men on the Score of Pay:*

Opinion that a direct increase of wages would not be effectual in causing men to stop in the brigade, *Duck* 2292..2337——Satisfaction of the men as regards pay, *Kelly* 2499——Satisfaction generally with the pay, if there were a superannuation scheme, and if promotion were more rapid, *Morris* 2635–2648; *Wittwer* 2776–2779——Satisfaction given by the wages, though a re-arrangement of the classes is required, *Fitzmaurice* 2812–2815.

Absence of complaint to the Board as to the pay of the men, *Hooke* 3458, 3459——Conclusion as to the men generally being satisfied with their pay, provided the superannuation question be satisfactorily settled, *Freeman* 3882–3884. 4295–4301.

See also *Engineers. Fines. Lodging the Men. Medical Attendance. Promotion. Recruits. Resignations. Salaries. Special Pay. Superintendents. Superannuation.*

Report, 1876—*continued.*

Peek, Frean & Co. Statement as to the want of more men and more engines at the fire at Peek, Frean & Co.'s, in April 1873, and as to increased mischief in consequence, *Port* 2133–2143. 2203–2206. 2218–2223.

Pensions. See *Gratuities and Pensions. Inalienable Pensions. Savings Fund. Superannuation.*

Perkins, Joseph. Pension of 14*s.* a week to a man, Joseph Perkins, who had served thirty years and ten months; larger pension if Perkins had been in the police, *De la Hooke* 3021–3026.

Petroleum. Considerable increase of fire risk since the introduction of petroleum and the use of explosive oil in lamps, *Tomkinson* 6760.

Phœnix Insurance Company. Statement as to the loss rate of the Phœnix Company being higher in London than elsewhere, *Lovell* 6365–6367——Financial position of the company; varying dividends paid, *ib.* 6660–6663——Different rates charged for movable property and for buildings; refusal by the Company to insure public warehouses, *ib.* 6664–6668.

Plumstead. Non-establishment hitherto of a station at Plumstead as applied for by the local authorities, *De la Hooke* 3263——Very good pressure of water in the mains in the Plumstead district, *Sir J. W. Bazalgette* 5765, 5766.

POLICE:

1. *Services now rendered by the Police in connection with Fires.*
2. *Suggestions on the Question of utilising the Force generally for the more prompt Suppression of Fires, as by keeping Manual Engines, Hose, &c., at the various Police Stations.*
3. *Views of Captain Shaw upon the Question of Police Co-operation; Comment thereon upon the part of the Fire Brigade Committee.*
4. *Suggestions for utilising the fixed Points of the Police.*
5. *Number and Distribution of Stations.*
6. *Question of Telegraphic Communication between the Police Stations and the Fire Brigade Stations.*
7. *Question of training the Police for Fire Extinction Purposes.*
8. *Question of placing the Fire Brigade under charge of the Police.*
9. *Pay and Superannuation.*

1. *Services now rendered by the Police in connection with Fires:*

Provisions of the Fire Brigade Act by which the duties of the police in reference to fires are regulated; general orders issued on the subject, *Lushington* 19–21.

Efforts made by the police to convey intelligence of fires as quickly as possible, *Captain Shaw* 529——Doubt as to any prejudice to the public by the withdrawal of the police from their beats during fires, *ib.* 1140–1142.

Valuable aid now rendered by the police at fires, *Hamlyn* 1825——Sufficient work for the police to do in keeping back the crowd, *Port* 2189, 2190.

Duty of the police to convey prompt information as to fires, and to keep order, but not to aid in the work of fire extinction, *Henderson* 7737-7740——Harmonious co-operation between the police and the fire brigade, *ib.* 7784, 7785——Important duties devolving on the police when fires occur, *Harris* 8061–8066.

Extract from the general police orders showing the duties to be discharged by the police in connection with fires, *App.* 634, 635.

Reference in report by Captain Shaw of 16th December 1871 to the efficient service rendered by the police in giving notice of fires, *App.* 641.

2. *Suggestions on the Question of utilising the Force generally for the more prompt Suppression of Fires, as by keeping Manual Engines, Hose, &c., at the various Police Stations:*

Importance of the police giving more direct assistance, by having appliances at the stations, *Hamlyn* 1825–1830——Decided approval of the suggestions for further utilising the police by keeping some fire extinction plant at the police stations, *Richardson* 4740——Advantage if the police could be utilised in promptly applying hose, *Thompson* 5158.

Great importance of the police in London aiding the fire brigade, though they could not be so utilised as to dispense with a special brigade of considerable size, *Easton* 6057–6064. 6096. 6143, 6144——Facilities to be rendered by the City police in aid of the fire brigade, *G. Shaw* 6241–6244——Improvement in London if the police stations were also fire stations, and if the police, as being on the spot, were furnished with hose, &c., for immediate application; that is, if there were a constant water supply in London, *Tozer* 6794-6801. 6806, 6807.

Great advantage by having apparatus at many police stations, and by the police applying the same upon the first outbreak of a fire before the engines arrive, *Swanton* 6685–

POLICE—continued.

2. *Suggestions on the Question of utilising the Force generally, &c.*—continued.

6985-6999——Suggestions as to the extent to which the police might be utilised in the prevention of fires, *Swanton* 6987-6996.

Further statement that by placing some of the surplus engines at police stations, and by utilising the police for fire extinction purposes, a great many fires would be stopped, without any increase of expense, *Swanton* 7128-7139. 7174-7176——Explanation that witness proposes that the police should go only to those fires close to their stations, and that, on the arrival of the brigade men, the duties of the police as firemen should cease, *ib.* 7132, 7133. 7135. 7163-7165. 7173-7175——Facility of taking manual engines from police stations to adjacent fires, *ib.* 7135-7139. 7166-7171. 7315-7318.

Expectation that by properly utilising the services of the police at the right moment there would frequently be very little for the brigade to do, *Swanton* 7174, 7175.

Advantage if some apparatus were kept at the police stations which could be promptly applied by the police; facility on this score if there were a constant pressure with a system of hydrants, so that hose might be attached by the police, *Henderson* 7734. 7742-7745. 7764-7766. 7775-7778. 7783——Limited extent to which it is desirable that the police should have charge of manual engines, *ib.* 7737-7740. 7779——Facility as to the use of manual engines, &c., by the police, whether the fire brigade is or is not made a part of the police force, *ib.* 7759-7766.

Increased charge for the police if they are to undertake additional duties; prospect, however, of a diminution of serious fires, *Henderson* 7770-7774. 7788. 7822——Non-objection to hand-pumps being kept at the police stations; difficulty as to supply of water without the aid of turncocks, *ib.* 7779-7782——Room for manual engines at all the principal police stations, *ib.* 7806. 7838. 7843, 7844.

Proposal for extending the fire brigade to the whole of the metropolitan police district by utilising the police stations as fire-brigade stations, whilst there are always men enough to take engines, &c., to fires and work them, *Harris* 7878-7880. 8008-8012——Limited increase of expenditure involved in the scheme for utilising the police stations, and for keeping engines and apparatus at them, *ib.* 7933-7942——Importance of prompt attendance from the local police stations, even though the fixed points may not be utilised in the same way, *ib.* 7968, 7969.

Return submitted by Captain Harris showing the number of steam and hand engines, and the number of men proposed at the several stations, *App.* 692, 693.

3. *Views of Captain Shaw upon the Question of Police Co-operation; Comment thereon upon the part of the Fire Brigade Committee:*

Valuable services which might be rendered by the police in the extinction of the smaller fires if the force could be utilised for the purpose without causing a divided responsibility, *Captain Shaw* 231-233——Contemplated use of the police chiefly in outlying districts and for the suppression of small fires, *ib.* 235-238——Advantage, in using the police for fire extinction, of the men being under the control of the brigade for the time being, *ib.* 239. 242, 243.

Great assistance in the suppression of fires if some appliances were kept at every police station, and if the police could work with the brigade without the evils of a divided responsibility, *Captain Shaw* 1019-1030——Suggestions with further reference to the increased aid which may be given by the police at fires, as by laying down the hose, &c. *ib.* 1509-1512——Concurrence in the view that fires may be much diminished by establishing numerous call-points, in conjunction with prompt action, by the local police, *ib.* 1655-1664.

Encouragement by the Fre Brigade Committee of suggestions for utilising the police in the work of fire extinction; unwillingness of Captain Shaw to work with the police in this direction, *Freeman* 3981-3983. 3990——Witness further submits that Captain Shaw has never been found willing to act cordially with the police; *ib.* 4005. 4208——Comment upon certain evidence of Captain Shaw favourable to the police being more directly utilised, as he has always protested against divided responsibility, *ib.* 4118-4120.

4. *Suggestions for utilising the fixed Points of the Police:*

Valuable use to be made of the stand points, or fixed points, of the police; importance on this score of telegraphic connection between the police stations and brigade stations, *Captain Shaw* 1656-1676——Valuable use which may be made of the stand points of the police in connection with local fires, *Freeman* 3984. 3987-3989. 4120.

Degree of advantage to be derived from placing the fixed points, 280 in number, at each of which a policemen is stationed, in communication with the fire brigade stations; advantage in a supply of hose, &c. being available at each fixed point, *Henderson* 7746-7758. 7764-7778——Further considerations as to the advantage to be derived from placing the fixed points of call in telegraphic communication with the brigade stations, *ib.* 7812-7823.

Report, 1876—*continued.*

POLICE—continued.

4. *Suggestions for utilising the fixed Points of the Police*—continued.

Suggestions for utilising the 280 fixed points of the police in reference to fires; advantage of the policeman at each fixed point going at once to any local fire and applying apparatus for its extinction, *Harris* 7862–7871——Short time for which a man stationed at a fixed point need be absent at any fire, *ib.* 7866–7869.

Further statement as to policemen at fixed points being able to go to local fires without prejudice to the public during their temporary absence, *Harris* 8004–8007.

5. *Number and Distribution of Stations:*

Total of 152 police stations; doubt as to the average distance apart, *Henderson* 7839–7842.

Increase by more than 400 stations of the present number of brigade stations if all the police stations and fixed points be utilised as proposed, *Harris* 7887–7892——Explanation that witness does not contemplate all the fire brigade stations being necessarily at police stations, but suggests that the former be supplemented by the latter, *ib.* 7970, 7971.

Map of London, setting out the different police stations, *App.* 601.

Return showing the total number of police stations within the metropolitan police district, distinguishing between those within and without the boundary of the Metropolitan Board of Works, *App.* 694.

6. *Question of Telegraphic Communication between the Police Stations and the Fire Brigade Stations:*

Limited extent to which there is telegraphic communication between police stations and fire brigade stations, an extension of such communication being very desirable, *Captain Shaw* 528–532. 1659–1676——Advantage if there were telegraphic communication between the police stations and the fire-escape stations, *Port* 2064, 2065.

Report by Captain Shaw in December 1871, adverse to the proposal of the insurance companies for telegraphic communication between the police stations and the fire brigade stations, *De la Hooke* 2939, 2940—— No recommendation in favour of such communication has since been made by Captain Shaw to the Board, *ib.* 2941–2944.

Advantages anticipated from a telegraphic connection of the police stations with the fire brigade stations, *Richardson* 4740; *Henderson* 7733–7736. 7741. 7810, 7811—— Refusal by the Metropolitan Board to connect the fire brigade and police stations by telegraph, as urged by the insurance companies, *Swanton* 7353.

Advantage of connecting the police stations by telegraph with the fire brigade stations, and of keeping engines and apparatus at the former when not close to a brigade station, *Harris* 7854–7856. 7861, 7862. 7872–7874.

Statement by Captain Shaw, under date 16th December 1871, that for several years there had been direct telegraphic communication between the head quarters of the police and the Watling-street Station without any beneficial result, *App.* 641.

Correspondence between the Salvage Corps and the Metropolitan Board in 1871–72 upon the question of telegraphic communication between every police station and the fire brigade station nearest to it, *App.* 681, 682. 684.

7. *Question of training the Police for Fire Extinction Purposes:*

Expediency of the police having some small training in the handling of hose, &c., if they are to assist the brigade more extensively, *Captain Shaw* 240–242——Objections to policemen acting as firemen; distinction observed in this respect at Manchester, *Berrey* 7443——Very little extra drill required in order to teach the police the use of manual engines, *Henderson* 7807–7809.

Advantage if the whole police force could be used as a reserve in the event of two or more very bad fires at the same time, *Harris* 7897–7899. 7953——Recommendation that all the men in the force be drilled as firemen, in the same way as the dockyard police; slight additional drill necessary for this purpose, *ib.* 7923, 7924.

Further suggestion that all the police be drilled as firemen, a supplementary force of nearly 10,000 men being thus obtained, *Harris* 7972. 7988——Doubt as to the increase of expense involved in the drilling and training of policemen as firemen, and in the creation of eight separate fire brigade districts instead of four, *ib.* 8022–8025.

8. *Question of placing the Fire Brigade under charge of the Police:*

Conclusion that the fire brigade should be a branch of the police, *Swanton* 6987–6996. 7235, 7236.

Expediency, as a rule, of the duties of the police being confined to the preservation of order and the protection of life and property, witness seeing no advantage in the fire brigade being under the jurisdiction of the Commissioners of Police, *Henderson* 7737–7740. 7751–7753. 7759–7769—— Belief that no economy could be effected from an entire transfer of the brigade to the police, *ib.* 7796—— Nor does witness see any advantage in amalgamation, so long as the present system of supply of water is in force, *ib.* 7797.

Conclusion

Report, 1876—*continued.*

POLICE—continued.

8. *Question of placing the Fire Brigade under charge of the Police*—continued.

Conclusion as to the necessity of the brigade being still kept a separate distinct body, if the administration were transferred to the police, *Henderson* 7826-7832——Objection to an amalgamation of the brigade with the police, in so far as the former might be available in case of riots, *ib.* 7845.

Inexpediency of any diminution of the brigade, even though the police should render direct assistance in aid of fire extinction, *Henderson* 7786–7788——Duty of the police to convey prompt information as to fires, but not to aid in their extinction; witness further submitting that they had better be confined to their proper duties, and that they have quite enough to do already, *ib.* 7798–7805. 7807–7817——Opinion that there is no direct connection between the duty of protecting life and property against fire, and the duty of protection against other risks, *ib.* 7824, 7825. 7833.

Important advantages to be obtained by amalgamating the fire brigade with the police; dissent from Colonel Henderson on this point, and concurrence with the late Sir Richard Mayne, *Harris* 7848-7853. 7926–7928——Valuable assistance now rendered by the police at fires, it being advisable, however, to place the police and the brigade men under the same management, *ib.* 7960-7967.

Doubt whether any difficulty would arise at fires in the city if the brigade were under the metropolitan police; that is, on account of the separate jurisdiction of the city police, *Harris* 8026–8035. 8053–8055. 8076–8088——Material assistance which may be given by the police as a separate force, though co-operation would be more effectual if there were an amalgamation of the two bodies, *ib.* 8037–8039——Feeling among the men as to there being a want of co-operation at times, *ib.* 8040, 8041——Advantage of the greater unanimity to be secured by the brigade and the police taking their orders from the same authority, *ib.* 8067–8070.

Increased rate necessary for the police if the fire brigade be transferred, the ratepayers having no control as to the expenditure of such increase, *Harris* 8071–8075.

9. *Pay and Superannuation:*

Explanation upon the subject of police superannuation; objection to the men being entitled to claim pensions after a certain length of service, irrespectively of exceptional misconduct, *Henderson* 7789–7793.

Table showing the rates of pay authorised for the several grades in the metropolitan police, *App.* 636——Table showing the pensions and gratuities authorised for the force, *ib.*

See also *Brighton. Dockyards. Liverpool*, 1. *Manchester*, 1. *Woolwich.*

Port, William. (Analysis of his Evidence.)—Is a first-class engineer in the D division of the fire brigade; concurs fully in the evidence of Captain Shaw, 1973–1977—— Importance of a superannuation scheme rather than an increase of wages, as a means of retaining men in the service, 1978–1986. 2240—— Probability of men remaining in the service longer than thirty years, if they have entered young and are still efficient, 1982–1985—— Statement in support of the representations by the men as to their being greatly overworked; average of fourteen hours a day at witness' station, 1987–1991.

Total of ten men attached to Kennington-lane Station, there being three fire-escapes, and five men being available at night, 1992-1996—— Disadvantage through there not being quarters at the station for all the men; difficulty especially as to married men, 1997-2006. 2162–2164——Want of six more men at the station to give an occasional leave, and to allow each man to have one night off duty in the week, 2007–2011.

Practice of witness always to go with the engine when a fire is reported, two men being left at the station to do the best in their power in the event of a call to another fire, 2012–2019. 2201, 2202——Satisfactory supply of water at fires in witness' district during the last year or so, 2020–2022——Facility in starting the plugs, and in obtaining water without the aid of the turncock; rare exceptions to this rule, the turncocks, moreover, being almost always at hand, 2023–2029. 2243–2246——Improvement if stand pipes were substituted for plugs, 2030, 3031.

Circumstance of only one man being left at some stations in the D division in the event of the engine going to a fire, whilst some stations are closed altogether, 2033–2037 ——Statement as to Woolwich Station having been closed on the occasion of the engine having gone to a fire at East Wickham, and as to the want of means for coping with another fire, if one had occurred at Woolwich at the same time, 2038–2063. 2149–2157.

Advantage if there were telegraphic communication between the police stations and the fire-escape stations, 2064, 2065——Information as to the distance between the fire-escape stations in the D division, it being very desirable to multiply the stations, and to increase the number of men, 2066–2080. 2158–2161.

Report, 1876—*continued.*

Port, William. (Analysis of his Evidence)—*continued.*

Duties of witness in drawing up reports, keeping accounts, making payments, and otherwise assisting the superintendent; three other first-class engineers with similar duties, 2081–2087——Calculation that the pay and emoluments of witness amount to 3 *l.* 7 *s.* a week, whereas he submits that he should receive as much as a chief inspector of police, who gets 3 *l.* 13 *s.* a week; claim also to some time off duty, 2088–2104. 2106–2113.

Willingness of the officers to contribute 2½ per cent. of their pay to a superannuation fund, 2105——Opinion as to the popularity of the service, though men frequently resign through the absence of a superannuation fund and the want of more time off duty, 2114–2125. 2258–2263.

Requirement of four men to work a manual engine, whilst there should be six men with a steam engine, 2126–2129——Undermanning of the engines generally at large fires, 2130–2144——Statement as to the want of more men and more engines at the fire at Peek, Frean's in April 1873, and as to increased mischief in consequence, 2133–2143. 2203–2206. 2218–2223——Specially short supply of water in the Rotherhithe district, 2145–2148——Careful system of drill to which recruits are subjected; varying time occupied, some men requiring a very long drill, 2165–2171.

Further evidence as to the excessive hours of duty of the men, though they may not be actually at work all the time, and as to the want of regular nights off duty, 2172–2177. 2191–2196——Witness can always count upon a week's leave, 2178, 2179——Promotion in the brigade chiefly by seniority, there being very little promotion in the upper ranks, 2180–2183——Disapproval of soldiers being called upon to assist the brigade 2184–2188——Sufficient work for the police to do in keeping back the crowd, 2189, 2190.

Advantage of an increase of several men and one officer at all the head stations, 2197–2200——Difficulty in obtaining the services of the bystanders gratuitously for pumping the engines, 2207–2211——Further statement as to the want of additional fire-escapes, so that in populous districts they should not be more than half a mile apart, 2212–2217. 2252–2257.

Opinion that a man pronounced unfit for service after twenty-five years should be entitled to retire with his maximum pension, 2224——Way in which a superannuation scheme would tend to increase promotion, there being many men not efficient on account of their age, who would be induced to retire, 2225, 2226. 2233–2239. 2264——Check to the spread of fires if party walls were carried above the gutter-plate, 2227–2232——Complaint in the force on account of the slowness of promotion, 2241, 2242——Approval of the turncocks' addresses being advertised, 2247, 2248.

Satisfaction to be given by a superannuation scheme even if promotion were more slow in consequence, 2249–2251——Much less necessity for the attendance of fire-escapes during the day than the night, 2265–2271——Expediency of the brigade being sufficiently strong to be independent of outside help at fires, 2272–2274.

Pressure (*Water Supply*). See *East London Waterworks Company. Hydrants. Kent Waterworks Company. Liverpool*, 2. *Manchester*, 2. *New River Company. Water Supply.*

Private Engines. See *Volunteer Engines.*

Probationary Service (*Firemen*). Suggested service of three months in the probationary class, *Captain Shaw*, 944. 948——Approval of the fourth class being treated as a probationary class, *ib.* 1397–1399.

Promotion. Objection to a re-arrangement of the classes, unless the total number of men be increased, *Captain Shaw*, 942, 943——Proposition that with an increased force, the time in each class be limited to two years, so that after six years' service every fireman would get into the first class if fit for promotion, *ib.* 944–956——Possibility under the foregoing scheme of the whole brigade consisting of first-class men; advantage anticipated, though increased pay would be involved, *ib.* 948–956.

Promotion in the brigade chiefly by seniority, there being very little promotion in the upper ranks, *Park* 2180–2183——Way in which a superannuation scheme would tend to increase promotion, there being many men not efficient on account of their age, who would be induced to retire, *ib.* 2225, 2226. 2233–2239. 2264——Discontent in the force on account of the slowness of promotion, *ib.* 2241, 2242.

Complaint as to the great stagnancy of promotion; improvement expected if men had a right to retire on a pension after thirty years' service, *Kelly* 2501–2508. 2536–2538. 2548, 2549——Satisfaction to be given by Captain Shaw's scheme for promoting men after a certain service in each class, *ib.* 2508–2512.

Slowness of promotion in the brigade; impetus to be given by a satisfactory superannuation scheme, *Morris* 2614–2617. 2632–2648. 2718–2736. 2758–2763——Way in which men are now induced to remain unduly long on the brigade through the absence of any

Promotion—continued.

any claim to a pension, *Morris* 2758-2763——Service of witness in the brigade for about two and a half years as a fourth-class fireman, and about the same time in the third class, *Wittwer* 2764-2767——Service of witness for two and a half years as a fourth-class fireman, he having been previously in the merchant service, *Fitzmaurice* 2796-2798.

Approval of some reasonable concession as to promotion, though witness objects to Captain Shaw's proposal on the subject, as involving too much expense, *Freeman* 4029-4031——Unduly high pay if, after six years' service, each firemen were to reach the first class and to get 5 *s.* a day, besides his clothing, lodgings, &c., *ib.* 4060-4077. 4103.

Comment upon the different views of the men and of Captain Shaw as to the effect of a superannuation, the former looking to it as expediting promotion, and the latter as retaining men in the service, *Richardson* 4540-4543——Circumstance of there having been seventy-five men promoted during the last two years, the absence of a superannuation scheme not having retarded promotion, *Thompson* 5441-5444.

Public Assistance at Fires. Difficulty in obtaining the services of the bystanders gratuitously for pumping the engines, *Port* 2207-2211.

Public Buildings. Very limited extent to which public buildings in the metropolis are under special watch by the fire brigade, whilst there are not men available for keeping guard in theatres, music halls, &c., *Captain Shaw* 1719-1734.

ublic Health Act. Reference to the Public Health Act as containing provisions relating to the prevention of fire in the provinces, *Lushington* 78-81.

R.

Radford, Charles. Case of Charles Radford, who was a first-class engineer, and broke down in health after seventeen years' service; pension of only 16 *s.* a week allowed by the Board, his pay having been 2 *l.* 9 *s.* a week, with his rooms, *Captain Shaw* 752-772——Explanation as regards the pension awarded to Radford, that witness cannot say what the relative pension in the police would be, *ib.* 1360.

Further statement as regards the pension to Radford, that his position was analogous to that of a chief inspector of police, and that on this basis he should have received a larger pension than 16 *s.* a week, *Captain Shaw* 1373-1386. 1502, 1503.

Explanation as to the relative pension in the police, *De la Hooke* 3028-3037——Gratuity of 20 *l.* awarded to the widow of Radford, the latter having died shortly after he was pensioned, *ib.* 3038-3040——Basis upon which the pension of 16 *s.* a week was calculated, *ib.* 3447-3450.

Statement to the effect that Captain Shaw did not report that Radford was injured in the execution of his duty, though he made a strong representation as to his excellent conduct, *De la Hooke* 3774-3783. 3809-3812.

Rate. Support of the brigade chiefly by a halfpenny rate levied over the area of the Metropolitan Board, *Lushington* 9——Similar sources for the maintenance of the fire brigade since its transfer to the Metropolitan Board, save that the halfpenny consolidated rate has been substituted for the halfpenny poor's rate formerly levied for the purposes of the brigade, *ib.* 427.

Gradual increase from 30,913 *l.* in 1866, to 43,514 *l.* in 1875, in the produce of the halfpenny consolidated rate, *De la Hooke* 3422——Increasing produce of the halfpenny rate, the amount in 1876 being estimated at 48,148 *l.*, *Freeman* 3865-3867. 3870, 3871.

Expediency of a removal of the restriction by which the Board cannot levy more than a halfpenny rate; increased efficiency if there were increased means at the disposal of the Board, *Freeman* 3885-3887. 3892-3894. 3928-3935——Reluctance of the Board to solicit powers of increased taxation for the brigade, though the tax may not be an unpopular one, *ib.* 4346-4351——Estimate that a three farthings rate would suffice to provide the required increase of stations and of staff, *ib.* 4367-4369.

Further explanation as to the Board not having taken active steps to obtain from Government an increase of rating powers, in order to increase the efficiency of the brigade, *Freeman* 4428-4435.

Necessity of an increased taxation beyond the halfpenny rate, if the force is to be increased, *Richardson* 4653-4655——Illustrations of the unequal incidence of a rate for the entire protection alike of insured and uninsured property, *ib.* 4964-4969. 5024-5026. 5098. 5111-5120——Increasing receipt from the halfpenny rate, though not sufficient to cover the increased wants of the brigade, *ib.* 5052-5054. 5057. 5106-5110.

Explanation as to the Committee or the Board not having applied for power to increase the halfpenny rate; opinion of many members of the Board that London is sufficiently protected by the present brigade, *Thompson* 5136-5142——Opinion that the Board should

Rate—continued.

should not be limited as to the amount of the rate for fire prevention, though a three farthings rate with an increased contribution from the insurance would be sufficient, *Thompson* 5209. 5363——Expediency of power to levy a 1 *d.* rate, if the insurance offices and the Government do not pay increased contributions, *ib.* 5408–5413.

Increasing income from the halfpenny rate, there being a fresh assessment every five years; produce of 48,000 *l.* in 1876, as against 38,000 *l.* in 1871, *Gunn* 5451, 5452. 5519–5522——Conclusion that in London it is not fair to make the rateable value the basis of contribution for the support of the fire brigade, *ib.* 5480, 5481.

Approval of the principle of immovable property being rated for fire extinction, as for all other purposes, *Thompson* 6736, 6737. *See* also *Insurance Companies.*

Ray, George. Gratuity of 10 *l.* to George Ray, whose leg was amputated through injuries which were considered not to have been received in the service, *Captain Shaw* 784–786 —— Reference to the injury to Ray as having happened whilst he was, in witness' opinion, on duty in the brigade, *ib.* 1361, 1362.

Information relative to the case of Ray, whose leg was amputated through injuries received in falling from a horse, and who received a gratuity of 10 *l.*; question hereon, whether Ray was not injured whilst on duty, and whether this was not the view of Captain Shaw, *De la Hooke* 3734–3752. 3787–3793. 3846–3849.

Reappointment of Committee. Recommendation that the Committee be re-appointed in the next Session of Parliament, *Rep.* iii.

Recruits:

Great difficulty in obtaining a sufficient number of efficient recruits, as compared with the excess of applications before the transfer of the brigade, *Captain Shaw* 291–303. 927–934——Considerable difficulty in keeping up the force to the present authorised strength of 398 men, the pay and prospects not being sufficient to retain the men in the service, and the supply of efficient recruits being limited, *ib.* 291–303——The force is now three short of its authorised strength, and there are no names in the applicants book, *ib.* 292–299.

Evidence as to the difficulty on the score of age through the comparative scarcity of recruits; value of a satisfactory superannuation scheme on this score, *Captain Shaw* 935–940. 1341. 1400, 1401——Necessity of advertising for men, *ib.* 941——Enlistment, exclusively, of sailors for the brigade, *ib.* 1135, 1136——Careful medical examination of recruits, *ib.* 1137.

Further evidence as regards recruiting to the effect that sailors can be got in numbers, but that the resignations are so numerous as to cause much difficulty, *Captain Shaw* 1323, 1324. 1331–1340. 1343, 1344——Reasons for preferring sailors, exclusively, *ib.* 1325–1330——Summary of the conditions required in candidates, *ib.* 1342.

Increasing number of applications from recruits, the resignations, on the other hand, being very large, *Captain Shaw* 1582–1586. 1747–1750——Preference for sailors from the merchant service, though in America and on the Continent soldiers are generally employed, *ib.* 1747, 1748. 1751–1759——Concurrence in the preference for sailors as recruits, *Hamlyn* 1881–1884; *Duck* 2364–2367.

Facility in obtaining eligible recruits if Captain Shaw did not stipulate for sailors exclusively, *Freeman* 4210–4214——Opinion favourable to the employment of other men besides sailors, *Richardson* 4956, 4957. 5005–5007——Recent date since which any difficulty has been experienced in obtaining recruits, *ib.* 4958——Virtual selection of the men by Captain Shaw, whilst the number is settled by the Board, 5032–5037.

Reasons for preferring sailors as fire brigade men, especially those who have been in the Royal Navy, *Swanton* 7212–7214——Advantage in recruiting more largely from the sailor class if policemen are to be selected for the fire brigade, *Harris* 8057–8060.

Want of proper opportunities on the part of Mr. Swanton for distinguishing between men of the navy and merchant seamen as regards fitness for the fire brigade, *Captain Shaw* 8095, 8096.

See also *Age of Appointment. Drill and Instruction. Manchester, 5.*

Rent (*Lodging the Men*). Statement as to the assistance given to the men in the shape of rent or partial rent; high rents necessary in some cases, *Captain Shaw* 256. 572, 573; *Freeman* 4064–4072——Large increase beyond witness' original estimate for rent and taxes, *Captain Shaw*, 1252, 1253——Diminishing charge for rent as new stations are being built by the Board, *Gunn* 5476.

Repairs (*Engines, &c.*). Very large increase in the cost of maintenance of engines, *Captain Shaw* 1257, 1258—— Control exercised by the Fire Brigade Committee as regards important repairs, whilst the smaller repairs are done in the workshops under Captain Shaw's orders,

Richardson

Repairs (*Engines, &c.*)—continued.

Richardson 5034——Considerable increase of charge under the head of repairs to engines *Gunn* 5474, 5475.

Reports. Annual report made by witness in addition to his special reports from time to time, *Captain Shaw* 501——Practice of witness as to visiting the stations in his division, and reporting to Captain Shaw, *Hamlyn* 1885–1889.

Information given to the insurance companies by means of the daily report or return by Captain Shaw of all fires which have occurred in the previous day; absence of any special report by the Board when large fires occur, *De la Hooke* 3677–3680. 3686–3691. 3843–3845.

Resignations. Importance of improving the position of the brigade men as regards pay and superannuation in order to retain the services of trained men, *Captain Shaw* 245–247. 308–311——Conclusion as to the want of a superannuation scheme being the cause of so many resignations, there being much dissatisfaction in the force on this score, *ib.* 716, 717. 791. 1735, 1736——Resignation of 640 men since the transfer of the brigade in 1866; loss of about 100 *l.* per trained man who leaves the brigade, *ib.* 917, 918. 922–926——Frequent resignations in order to enter other brigades where better terms are held out, *ib.* 1737–1739.

Concurrence in the evidence of Captain Shaw as to the importance of a system of superannuation in order to retain men in the brigade, *Hamlyn* 1798–1808. 1819–1821. 1929–1936. 1972; *Port* 1978–1986. 2240; *Duck* 2287–2293. 2337–2341; *Bull* 2394–2399; *Morris* 2610–2613. 2670–2681. 2714–2717; *Wittwer* 2769–2772; *Fitzmaurice* 2799–2801.

Doubt as to the subsequent career of the men who now leave the brigade, *Kelly* 2519–2527—— Resignation of many men in order to go to sea and to enter other employment, *Morris* 2688–2692. 2698–2704. 2714–2717. 2724–2736.

Witness submits that Captain Shaw's statement as to the great loss entailed by resignations through the want of a superannuation allowance is a very extravagant one, *Freeman* 3993–4000. 4005. 4208. 4223——Tendency to increased resignations through sailors, exclusively, being selected by Captain Shaw, *ib.* 3998–4000——Numerous resignations in order to obtain better remuneration elsewhere, *ib.* 4000–4002. 4208.

Belief that the resignations are partly due to the strictness of the discipline and the monotony of the service, especially for men who have led a seafaring life, *Freeman* 4206–4209. 4223——Various reasons why men leave the force, it being perfectly fallacious to conclude that they all leave through want of a superannuation scheme, *ib.* 4223——Death or dismissal of 100 men out of the 600 reported by Captain Shaw to have left through discontent with the service, *ib.* 4329–4331.

Statement showing the numerous resignations after short service, witness submitting that there would still be a large number of short-service men under any superannuation scheme, *Richardson* 4555. 4558–4568——Reference to a certain table as showing that eighty-six men left the service under three months and 246 men in a year out of a total of 610 men, *ib.* 4558–4560.

Statement to the effect that many of those who have left the brigade have done so in order to join the salvage corps (Mr. Swanton, for instance), or to enter other brigades, because of the better remuneration, and not because of dissatisfaction through the absence of a superannuation scheme, *Richardson* 4598–4609——Summary of grounds for concluding that men have not left the brigade in any large numbers on account of there being no superannuation scheme, *ib.* 4627–4629.

See also *Hours of Duty. Inalienable Pensions. Savings Fund. Superannuation.*

Respirators. Action of the Fire Brigade Committee in ordering certain patent respirators for the firemen, though Captain Shaw has not made use of them, *Thompson* 5251–5255.

Further statement as to Captain Shaw's not allowing the men to wear respirators, though they were purchased without his raising any objection, *Thompson* 5394–5398. 5432–5440.

Responsibility. Expediency of only one brigade for the entire metropolis, *Captain Shaw* 1293, 1294.—— *See* also *Police*, 8.

Rewards (*Saving of Life*). Objection to pecuniary rewards to the men as compared with an honorary badge or medal, *Captain Shaw* 1172, 1173. 1358, 1359. 1689–1693—— Instances of complaints by men who have not been rewarded for saving life, though recommended to the Board, *ib.* 1204–1206.

Dissatisfaction expressed by the men some years ago with the way in which rewards for saving life were dispensed by the Society for the Protection of Life from Fire; communication

Report, 1876—*continued.*

Rewards (*Saving of Life*)—continued.

munication with the society on the subject in 1871, since which the Board have been under the impression that the men were satisfied, *De la Hooke* 2984-3003.

Explanation as to gratuities not having been awarded in certain cases of men who have saved life from fire, *App.* 631, 632.

See also *Badge of Merit.*

Richardson, Guildford Barker. (Analysis of his Evidence.)—Is a Member of the Works and General Purposes Committee of the Metropolitan Board, and has until recently been vice-chairman of the committee, 4454, 4455——Reference to the committee of a memorial from the officers and men of the fire brigade in March 1874, upon the question of superannuation; subsequent resolution of the Board in July 1874 that a scheme should be established, based upon contributions from the men, 4456, 4457——Interval between July 1874 and January 1875 before the committee took action, a scheme prepared by Mr. Thompson, the chairman of the committee, having then been completed for consideration, 4458-4461.

Report subsequently laid before the committee by Captain Shaw, stating the objections of the men to Mr. Thompson's scheme; summary of the objections urged in this report, 4462. 4465, 4466——Basis of the scheme that the men should contribute 2½ per cent. of their pay, and that after thirty years' service they should retire with a pension equal to half their pay; several other conditions of the scheme, 4463, 4464——Entire inaccuracy of the assumption on the part of the men and Captain Shaw that the scheme involved a system of superannuation for a future generation at the expense of the men now serving, 4466——Report upon the scheme by the accountant of the Board, but not favourably, 4467, 4468.

Conditions adopted by the sub-committee of the Works and General Purposes Committee in March 1875, as the basis of a new scheme; subsequent preparation of a scheme embodying these conditions, which was fully considered and amended by the sub-committee, and was finally considered by the full committee in November 1875; 4469-4471——Rejection of the foregoing scheme by the Works and General Purposes Committee, chiefly on the ground that it provided for the officers and men paying back subscriptions from the time of entering the service, 4472-4476——Delay subsequently to November 1875, before any further scheme was submitted; illness of two members of the Board adverted to hereon, 4477.

Eventual initiation of a new scheme by witness, which was submitted to the Works and General Purposes Committee on 27th March 1876, was approved by the Committee without alteration, and was finally adopted by the Board on 31st March, with one or two important alterations, 4477-4481——Amendment made in the scheme to the effect that for a service of less than ten years a man, obliged to leave through infirmity, should be entitled to a gratuity equivalent to one month's pay for each completed year of service, 4478——Circumstance of Captain Shaw having been present at the committee during the discussion of witness' scheme, without offering any suggestion for its amendment, his only suggestion being that it should be first referred to the men, 4479.

Statement in justification of the refusal by the Works Committee and by the Board to submit the scheme in question for the consideration of the men; very liberal character of the scheme adverted to hereon, 4479-4491——Much greater return to be given to the men under the scheme than was represented by the savings fund, 4484-4487. 4499——Unauthorised course pursued by Captain Shaw in obtaining a copy of the scheme, and submitting it to the men, 4485——Misconception upon which the men rejected the scheme of the Board, it being much more liberal than the scheme proposed by themselves in February 1874; 4485, 4486.

Dissent from the view as to the necessity of the scheme as a means of retaining the men in the service, 4487-4489——Course pursued subsequently to the rejection of the Board's scheme by the men; resolution eventually adopted to postpone further action in the matter pending the Report of the present Select Committee, 4492-4497——Importance of very careful consideration before embarking upon a scheme involving contributions by the men, as it must be adhered to however costly, 4499.

Illustration in the case of Mr. Bridges, a superintendent in the brigade, of the great gain to him under the superannuation scheme in return for the proposed transfer of the amount paid by him to the savings fund; comment upon the rejection of the scheme by Bridges, as the result of an entire misconception, 4499-4501. 4533——Comment also upon the rejection of the scheme by a first-class engineer, named Flynn, who has been in the service thirty-eight years, and is over sixty-four years of age; liberal annuity upon which he might at once retire as compared with the sum paid by him to the savings fund, 4501-4503.

Explanation as to the constitution and administration of the savings fund, formerly called, erroneously, a superannuation fund, 4503-4505——Inequality to be dealt with under the superannuation scheme, inasmuch as some men have contributed more largely than

Richardson, Guildford Barker. (Analysis of his Evidence)—*continued.*

than others to the savings fund, 4503. 4506–4509——Semi-official representations made to the men as to their inconsiderate haste in rejecting the Board's scheme; refusal on their part to withdraw their rejection, 4510.

Statement as to the necessity of the provision in clause 9 of the scheme as to men being entitled to a pension after a certain service, at sixty years of age; that is, in addition to pensions on medical certificate of incapacity, 4511——Explanation in reply to the claim by the men to receive pensions in proportion to their pay and allowances combined, whilst their contributions should be based only upon their pay, 4511–4517——Calculation of the Board's scheme upon a 3 per cent. contribution, whilst the men propose 2½ per cent., 4517. 4538, 4539.

Comparison between the amount of pensions under the Board's scheme, under the men's scheme, and under the police scheme, witness submitting that the Board's scheme is the most liberal, 4517–4523——Explanation of the separate mode in which it is proposed to deal with men transferred with the old brigade and with men who have since joined, as regards the sum to be contributed in consideration of the pension to be awarded, 4523–4528. 4537.

Inability of the Board to deal with the savings fund save by the men's consent; option in the men to transfer it to the superannuation fund and to get the benefit of the latter, 4529, 4530. 4535–4537——Illustration of the advantage of the Board's scheme in the case of men leaving after ten years in the brigade who have been contributing during period to the savings fund, 4531, 4532——Varying advantage to different men according to length of service, 4533——Obligation upon those joining in future to leave their contributions behind them if they leave the service, 4536. 4568.

Comparison between the working of the Board's scheme of 3 per cent. deduction and the men's scheme of 2½ per cent. deduction; much larger relative pension in the former case, 4537–4540—— Comment upon the different views of the men and of Captain Shaw as to the effect of a superannuation, the former looking to it as expediting promotion and the latter as retaining men in the service, 4540–4543——Strong objection to Captain Shaw's suggestion that the men should have an inalienable pension after a certain service, irrespective of misconduct, and without any discretion in the Board, 4544–4551.

Data for the calculation that if there were no resignations as the result of a superannuation scheme, about half of those entering would attain the age of sixty in the brigade, and would be entitled to a maximum pension; entire failure of the fund if there were not numerous resignations, 4551–4555. 4561–4568——Statement showing the numerous resignations after short service, witness submitting that there would still be a large number of short service men under any superannuation scheme, 4555. 4558–4568.

Considerable number of men now approaching the age for pensions, whilst there are sixty-seven men over fifteen years' service, 4556, 4557——Reference to a certain table as showing that eighty-six men left the service under three months, and 246 men in a year, out of a total of 610 men, 4558–4560——Conclusion as to the entire inaccuracy of Captain Shaw's estimate as to each man costing on an average 100 *l.* for training, 4561.

[Second Examination.]—Explanation that the superannuation scheme would, in all probability, have included those who had served as parish engine keepers had it been known that any were still in the brigade, 4569. 4574——Active agitation against the scheme by a man in the brigade who was transferred from one of the parishes; probable acceptance of the scheme but for the influence thus brought to bear upon the men, 4569–4573——Particulars relative to the case of Smart, formerly in the service of the Greenwich parochial authorities, who received 10 *l.* as compensation on leaving the brigade in ill health, 4574–4587.

Tabular statement submitted, and explanations thereon, showing the liberal annuities to which the first and last man in each grade would be entitled under the scheme as compared with the amounts contributed by them, 4588–4592——Concurrence between the foregoing table and another table, showing the increasing annuity which each fireman would receive, calculated as a per-centage upon his pay; maximum per-centage of 66 *l.* 13 *s.* 4 *d.*; 4593–4598.

Statement to the effect that many of those who have left the brigade have done so in order to join the salvage corps (Mr. Swanton, for instance), or to enter other brigades, because of the better remuneration, and not because of dissatisfaction through the absence of a superannuation scheme, 4598–4609——Considerable sums drawn from the savings fund by men on leaving the brigade, 4609, 4610— Doubt as to the expediency of a savings fund; its operation in inducing men to leave the service, 4610–4614.

Further and strong objection to an inalienable right to a pension; prejudicial effect thereof upon the efficiency of the brigade, 4614–4616——Conclusion as to the very liberal character of the Board's scheme, and as to the men having acted under misconception in

Report, 1876—*continued.*

Richardson, Guildford Barker. (Analysis of his Evidence)—*continued.*

refusing it, 4617, 4618——Action of the Board with a view to the adoption of a scheme previously to and irrespective of the appointment of the present Select Committee; delay through the illness of two members of the Board, 4619, 4620.

Reference to a letter from the men in December 1872, expressing satisfaction with their increased rates of pay; inference that they were not in a state of discontent through there being no superannuation scheme, 4620–4623——Impression that prior to 1872 the Board had not received any representations as to the want of superannuation, 4623–4627——Summary of grounds for concluding that men have not left the brigade in any large numbers on account of there being no superannuation scheme, 4627–4629.

Evidence purporting to show that during the temporary closing of the station at Woolwich, through the absence of all the available men at a fire, there was but a nominal risk incurred; exceedingly few fires in the district, 4630–4640. 4838–4841——Result of an inquiry by witness that at Blackheath and Lewisham stations there are very few calls to fires, and that nevertheless the men have had comparatively little leave, 4641–4645. 4811–4813——Conclusion that the question of leave is generally in a very unsatisfactory state, and that there should be an addition of one man to each station, or about fifty men altogether, in order to admit of some concession on this point, 4645-4648. 4739.

Exception taken to Captain Shaw's comparison between the relative ranks in the brigade and in the police as affecting the pension scheme, 4649, 4650——Expediency of the superannuation being based upon the pay, without reference to the pensions in the police, 4651, 4652.

Necessity of an increased taxation beyond the halfpenny rate if the force is to be increased, 4653–4655——Argument that portion of the increased charge necessary for an increased brigade should in fairness be borne by the insurance companies, 4656–4671——Large proportion of uninsured property, the protection of which can only be provided for by means of a rate, 4656. 4666, 4667——Conclusion as to the insurance offices at Manchester and Liverpool contributing towards the cost of the local brigades, 4658, 4659. 4662, 4663——Question considered whether the judgment in the case of the Drighlington Local Board *v.* Bower does not establish the legal immunity of insurance offices from liability for fire protection, save where there are special Acts to the contrary, 4661. 4664. 4669-4671.

Strong conviction of witness that unless the entire charge of the water supply be placed in the central authority, a satisfactory constant service at high pressure cannot be obtained for the more efficient working of the fire brigade, 4672 *et seq.*——Unjustifiable expenditure in laying down an extensive system of hydrants under the partial constant supply now in force, 4676. 4690 *et seq.*——Concurrence in Captain Shaw's opinion as to the great value of hydrants; that is, under certain conditions as to constant supply and sufficient pressure, such conditions being wanted in London, 4677 *et seq.*

Facility of obtaining supplies of water by means of plugs, as well as hydrants, under a constant service, 4680–4684——Reference to a complaint by the East London Company in December 1872 as to the great waste in connection with fire-plugs, 4684——Quotation of a letter from Mr. Phipps, on the part of the Lambeth Company, in January 1875, as tending to show the difficulties on the score of pressure under a constant as well as an intermittent supply, 4684-4689.

Favourable situation of the Greenwich and Woolwich districts for a constant supply at high pressure by gravitation, as given by the Kent Water Company, 4690–4693——Explanation as to hydrants not having been affixed to the constant-supply mains of this company generally; data for the conclusion that the pressure could not be depended upon, 4692–4713. 4728–4732——Unsatisfactory result of certain experiments by Sir Joseph Bazalgette as to the pressure to be calculated upon, 4695, 4696. 4734-4738——Striking illustration of the value of hydrants in the case of Manchester, the corporation, however, having the water under their entire control, 4695. 4700. 4715. 4790——Doubt whether hydrants could supersede the use of engines in any part of the Kent Company's district, 4707–4713.

Estimated expenditure of about three quarters of a million in laying down hydrants throughout the metropolis, witness further submitting that the conditions as to pressure do not justify this outlay, 4714-4716. 4720. 4731——Quotation of a report by Captain Shaw in 1866 in condemnation of the intermittent system, and in favour of a constant supply at a height of not less than 300 feet above high-water mark, such supply to be by gravitation alone, 4718–4723——Circulation of Captain Shaw's report of 1866 among the water companies, by whom the difficulties or impossibilities of a constant high pressure by gravitation were fully pointed out, 4724–4727.

Decided approval of the suggestions for further utilising the police by keeping some fire-extinction plant at the police stations, and by placing the latter in telegraphic communication with the fire brigade stations, 4740——Opinion that, as regards the wate supply, joint-stock companies cannot be properly called upon to do what is required for the protection of life and property, 4741——Conclusion, moreover, that London with its immense population should not be supplied with water by joint-stock companies, and

that

Richardson, Guildford Barker. (Analysis of his Evidence)—*continued.*

that if the supply were concentrated in the Metropolitan Board, satisfactory arrangements as to pressure, &c., would in a few years be provided, 4741–4744.

Explanation that the Fire Brigade Committee acts independently of the Board, save to a limited extent; large powers delegated by the Board to the committee, 4745–4747 Sufficiently full powers now possessed by the committee. 4747–4752——Instances of proposals by the committee on financial points not having been adopted by the Board, 4748–4751——Objection to the insurance offices being represented on the committee, 4753, 4754.

Evidence in further support of the conclusion that the insurance companies should in equity contribute towards an increase of the brigade, it being expedient to base such contribution upon the amount of the rate, 4754–4774.

Exceptions taken to Captain Shaw's recommendation of hydrants, if only as a means of obtaining water more quickly; concurrence of Captain Shaw in Sir J. Bazalzette's report adverse to a large outlay on hydrants under the existing conditions of water supply, 4775–4779——Explanation that the Board have authorised the placing of hydrants in some select places, and will probably extend their use locally, though at present unprepared to incur the large outlay involved in applying them throughout London, 4780–4789——Great economy as regards engines, horses, and stations, if hydrants could be put into efficient operation throughout the metropolis, 4788–4790.

Opinion that the stations and men are now too much scattered, 4790——Recent opposition by witness to a new station at Shooter's Hill; use which might be made of the local police station, 4791——Constant supply in the mains in the City, but not in the service pipes, 4792——The Metropolitan Board have not considered the question of applying hydrants throughout the City, 4793.

Comment upon the reply of the East London Company to the circular from the Board inclosing Captain Shaw's report of 1866; nothing was done by the Board as regards constant service in consequence of this reply, 4794–4801——Limited advantage by the turncocks living near the fire-brigade stations; obstacle to lodging them in the stations, 4802–4807.

Further evidence as to the men at the stations getting very little leave, though they may be seldom called to fires; dissent from the view that on this score there should be an increase of 100 men instead of fifty, 4810–4831——Opinion that, including the largely increased force proposed for the new central station, 100 additional men, or less than 100, would be sufficient, 4832–4837.

Examination in further support of the view that the men must have misjudged witness' superannuation scheme very hastily and erroneously if they supposed that it required them to make back payments as a basis of the fund, 4843–4855——Large boon offered to the men by the scheme, so that it was not deemed necessary to consult them beforehand through Captain Shaw, 4857–4862——Doubt as to Mr. Thompson's scheme having been based solely upon contributions by the men, 4863–4865.

Further explanation as to the delay before a scheme was finally adopted by the Board, witness repeating the denial that the appointment of the present committee had anything to do with the promotion of the scheme, 4866–4871——Presence of Captain Shaw at every meeting when the scheme was under discussion, without ever offering any suggestion for its amendment, 4872–4874.

Argument further opposed to inalienable pensions, irrespective of misconduct, though it is very improbable that after long and efficient service men would misconduct themselves, knowing that they could claim their pensions, 4875–4881——Proportion of engines to population in Manchester and Liverpool, under the hydrant system, and in London respectively, 4882–4885.

Objection of the Metropolitan Board to incur the public odium entailed by requiring the water companies to give a constant supply, inasmuch as this would necessitate an enormous outlay by owners and occupiers for new fittings, &c., 4886–4895——Efforts of the Board to obtain legislation as favourable as possible for the public as against the companies, but only with partial success, 4889, 4890——Exceedingly large outlay for hydrants as well as new fittings, by utilising a constant service for fire protection and for domestic supply, the Metropolitan Board not feeling justified in initiating such expenditure, 4891–4894.

[Third Examination.]—Further consideration of the judgment in the case of the Drighlington Local Board *v.* Bower as bearing upon the question whether it is not entirely voluntary in the insurance companies in London to contribute any increased sum towards the cost of the fire brigade, 4895–4902——Denial that the Metropolitan Board ever pledged themselves, through their counsel upon the inquiry in 1871, to apply hydrants extensivly, regardless of the question of expense, 4904–4910.

Reiteration of objections to the proposal for inalienable pensions, irrespective of misconduct; expediency of the men trusting to the liberality of the Board in case of misconduct after many years of good service, 4911–4930. 4980–4982——Question considered whether

Richardson, Guildford Barker. (Analysis of his Evidence)—*continued.*

an inalienable right to pensions would not induce men to remain in the service although they might have a legal right to leave, 4917–4923.

Belief as to the very high pressure available at Liverpool, 4931–4933——Fallacy of calculations as to the cost in London under a system of hydrants if such calculations are based upon an assumed cost of only 4,737 *l.* in Liverpool, 4935–4948——Very little room for reduction under the head of salaries and wages by a universal use of hydrants, 4947; 4948——Probable saving of from 3,000 *l.* to 4,000 *l.* a year in horse hire if there were a sufficient pressure for hydrants, 4949. 4955——Small number of steam engines and manuals at Liverpool; gradual reduction feasible on this score in London, if there were a system of hydrants with a proper pressure, 4950–4954.

Opinion favourable to the employment of brigade of other men besides sailors, 4656, 4957. 5005–5007——Recent date since which any difficulty has been experienced in obtaining recruits, 4958——Average of about twenty-three years of age at which men enter, 4959.

Witness further contends that it would be exceedingly unfair to increase the halfpenny rate so as to relieve the insurance offices altogether; argument that the latter are, strictly, the owners of the property, *quoad* fires, 4960–4969——Illustrations of the unequal incidence of a rate for the entire protection alike of insured and uninsured property, 4964–4969. 5024–5026.

Absence of increase in the Government contribution, though the value of Government buildings has increased, 4970–4972——Reasons further assigned for not giving the insurance offices a representation in the expenditure of the money, 4973, 4974——Support of the salvage corps entirely by the offices, it being the duty of the corps to save property and not to extinguish fire, 4975–4977.

Trying duty of the men in being kept so long at the stations waiting for calls to fires, an increase of men being required so as to admit of additional leave, 4978, 4979——Explanation with further reference to witness' objection to a new station at Shooter's Hill, 4984–4686——Question whether advantage would not be derived from instructing the men's wives in the use of the telegraph, 4987.

Further evidence favourable to the stations being more concentrated rather than more scattered, 4988–4990——Equal expense of horse hire whether the engines are concentrated or scattered, 4991, 4992——Payment of 150 *l.* a year for the use of two horses, with 50 *l.* a year for the driver, the latter not being a fireman, 4993–4996.

Further consideration of the cost per hydrant in the metropolis, witness submitting that this cannot be put at less than 10 *l.* including saddle pieces, &c., 4997–5001——Approval of an extended use of hydrants if there were a pressure of not less than 300 feet, 5002, 5003——Opinion that casualties are more numerous in the police than in the brigade, 5004.

Very limited cost of hydrants over the limited area of the city as compared with the rest of the metropolis, 5008–5013——Numerous conditions as to the construction and the laying of hydrants in the city, 5014——Due attention paid by the Metropolitan Board to representations from the insurance offices, it not being expedient that the latter should have direct control in the management of the brigade, 5017–5021——Discussion between the Board and representatives of the offices upon the subject of small river floats, 5022, 5023.

Doubt as to there being any use in training the drivers as firemen, 5027——Efforts of the Board in order to keep down the cost of horse hire, 5028, 5029——Due care also taken to keep down the contingent expenses as much as possible, 5030, 5031——Large discretion allowed to Captain Shaw in matters of detail, the Fire Brigade Committee exercising such control as is desirable in the interests of the ratepayers, 5032–5047.

Satisfactory manner in which fires are coped with by the existing brigade, 5048–5050——Entire absence of waste in the application of the funds at the disposal of the Board, 5051——Increasing receipt from the halfpenny rate, though not sufficient to cover the increased wants of the brigade, 5052–5054. 5057. 5106–5110——Deficiency of from 3,000 *l.* to 4,000 *l.* on the past year, 5054. 5106——Denial that the men are overworked, though an increase of staff is required on the score of leave, 5055.

Examination in reply to objections to witness' view that the insurance offices should contribute an increased sum towards the cost of fire extinction; grounds for the conclusion that they should pay one-third of the whole expense, less the amount expended for protection of life, 5058–5081——Calculation that instead of 18,000 *l.* the companies should now contribute 22,000 *l.*; 5078.

More effectual appliances for the protection of insured property (as well as uninsured) since the transfer of the brigade to the Metropolitan Board, 5079——Less concentration of the stations in the midst of large masses of insured property since the transfer; reduction, also, in the number of such stations, 5082–5089——Conclusion as to the Board being better qualified than the insurance companies to judge as to the proper localities for stations, 5090–5093.

Richardson, Guildford Barker. (Analysis of his Evidence)—*continued.*

Further argument that the insurance companies should not be represented on the Fire Brigade Committee, inasmuch as it is the owners of property who, really thought indirectly, pay in proportion to the amount insured, 5094–5098——Expediency of the cost of the briga all borne by the owners of insured property if all property were insured, 5098——Necessity of a rate in order to reach the uninsured property, though witness being further submits that great inequality is involved, 5098. 5111–5120.

Practice of consulting Captain Shaw before any important change is made in the management of the brigade 5099–5101——Absence of complaint by the insurance offices as to their not being represented, or as to their paying too much, 5102–5105——Explanation that an increase of stations does not necessarily involve an increase of annual charge, 5110.

River-side Fires. See *Floating Engines.* *Southwark.*

Rotherhithe. Specially short supply of water in the Rotherhithe district, *Port* 2145–2148 ——*See* also *Floating Engines.* *King and Queen Granary.* *Water Supply*, 9.

S.

Sailors. See *Recruits.*

St. Paul's Cathedral. Economy in laying down hydrants in St. Paul's, the pavements not being disturbed, *G. Shaw* 6256–6258.

Salaries. The superintendents get 200 *l.* a year, and the chief officer 1,000 *l.*, *Captain Shaw* 255——Much larger amount now paid in salaries than was allowed for in witness' gross estimate of 50,000 *l.* a year, *ib.* 1238–1242.

Very little room for reduction under the head of salaries and wages by a universal use of hydrants, *Richardson* 4947, 4948.

Gradual increase of the charge for salaries and wages from 17,509 *l.* in 1866, to 37,710 *l.* in 1875, *Gunn* 5468, 5469.

See also *Pay.*

Salford. Satisfactory working of the Hawksley hydrant, as used in Salford, *Berrey* 7376.

SALVAGE CORPS:

Duty of the brigade to hand over to the salvage corps the property saved from fire, *Lushington* 43, 44——Formation of a salvage corps adverted to as being entirely optional, though if formed, it is to receive every assistance from the Metropolitan Board, *ib.* 90, 91.

Doubt as to the salvage corps preventing the occurrence of many fires, though they exercise supervision at the docks, &c.; they give no relief to the brigade in the sense of lightening the more onerous duties of the latter, *Captain Shaw* 1513–1525.

Representation of the London insurance companies generally by the salvage corps, *De la Hooke* 2932, 2933——Explanation that all recent communications from the insurance companies to the Board have come through the salvage corps, *ib.* 3404, 3405.

Support of the salvage corps entirely by the offices, it being the duty of the corps to save property, and not to extinguish fire, *Richardson* 4975–4977——Reference to the salvage corps, supported entirely by the companies, as not assisting the brigade in fire extinction, *Thompson* 5357.

Establishmen of the salvage corps by the companies upon the transfer of the firemen to the Metropolitan Board; duty of the corps to see exclusively to the protection of property, *Lovell* 6448, 6449——Option in the offices as to joining the corps, *ib.* 6449 ——Harmonious co-operation of the firemen and the salvage corps, *ib.* 6620——Employment of the salvage corps by the insurance companies in order to lessen the damage to insured property when fires occur; assistance rendered by the corps to the fire brigade, *Swanton* 6960–6963——Facility in obtaining men for the corps, *ib.* 7154, 7155——Total of sixty-four men now in the corps, there being four stations in communication with each other, *ib.* 7154–7162——Requirement as to the men living at or near the stations of the corps, *ib.* 7210, 7211——Continuous service of witness for twenty-eight years as a fireman, he having commenced in the lowest grade of the insurance companies' brigade, *ib.* 7214–7219.

Average of about 6,000 *l.* a year as the cost of the salvage corps, the expense being now defrayed entirely by the companies, though the services of the corps are extensively given to the protection of uninsured property, *Swanton* 7220–7232.

Letter from Mr. Lovell, on the part of the London Salvage Corps, to the Metropolitan Board,

Report, 1876—*continued.*

SALVAGE CORPS—continued.

Board, dated 23rd November 1871, submitting suggestions on several points for the more effectual suppression of fires, *App.* 680, 681.

Reply to the foregoing on the part of the Metropolitan Board, dated 23rd December 1871, containing explanations in connection with the several suggestions made by the salvage corps, *App.* 681, 682.

Further communication from the salvage corps, dated 1st January 1872; regret expressed at the non-adoption of any of the suggestions made on the part of the insurance offices, *App.* 684.

See also *Insurance Companies.*

San Francisco. Force of 1,023 firemen, so called, in San Francisco, *Captain Shaw* 1753.

Saving of Life. Means of supplying information as to the number of lives saved by the brigade since 1870, but not previously, *Captain Shaw* 142——Conclusion that many more than half the lives saved at fires are saved by firemen, *ib.* 1422, 1423.

Return of men who have displayed great merit in saving life from fire, and whose cases have been specially laid before the Metropolitan Board by the chief officer, *App.* 631, 632——Explanation as to gratuities not having been awarded in the foregoing cases, *ib.* 632.

See also *Badge of Merit. Fire Escapes. Rewards.*

Savings Fund. Contribution by each man of 6*d.* a week towards the savings fund, formerly called the superannuation fund, *Captain Shaw* 792–798——Views of the men as to their fair claim to a return of the sums deducted if they leave the force except for misconduct, and if they do not receive a pension or gratuity greater than the sum deducted; concurrence of witness in this conclusion, *ib.* 868–871.

Inability of witness to explain a suggestion by the men that the amount at credit of the savings fund shall remain at their disposal as hitherto, *Captain Shaw* 876. 915—— Full control of the men over the money at the credit of the savings fund, *ib.* 876.

Justification of the course pursued by the Board in changing the term "superannuation fund" into "savings fund," the fund never having possessed the conditions of a superannuation scheme, *De la Hooke* 3576–3583.

Explanation as to the constitution and administration of the savings fund, formerly called, erroneously, a superannuation scheme; inequality to be dealt with, inasmuch as some men have contributed more largely than others to the savings fund, *Richardson* 4503–4509——Inability of the Board to deal with the savings' fund save by the men's consent; option in the men to transfer it to the superannuation fund, and to get the benefit of the latter, *ib.* 4529, 4530. 4535–4537 —— Considerable sums drawn from the savings fund by men on leaving the brigade, 4609, 4610——Doubt as to the expediency of a savings fund; its operation in inducing men to leave the service, *ib.* 4610–4614.

See also *Superannuation.*

Serious Fires. Explanation of the data upon which "serious" fires are distinguished from other fires; much larger proportion of serious fires in 1866 than in 1875, *Captain Shaw* 129–138—— Explanation that fires where loss of life occurs are not classed as serious fires if they are on a small scale, *ib.* 248, 249——Further diminution of the severity of fires if the brigade be increased, *ib.* 1114, 1115——Absence of any rule by which serious fires are to be determined, *ib.* 1170, 1171.

Value of an increased number of stations and of engines as a means of preventing exceptionally great calamities, and of reducing the proportion of serious fires; room for reduction on the latter score, *Captain Shaw* 1291, 1292. 1295–1302——Important reduction effected since 1866 in the proportion of serious fires, further reduction being feasible by means of a multiplication of stations, *ib.* 1360–1393.

Gradual diminution in the proportion of serious fires, witness submitting that a moderate increase of the brigade from year to year is all that is required, *Freeman* 3914 —— Slight margin for further reduction of destructive fires as compared with the heavy cost of a largely increased brigade, *ib.* 4130–4132.

Doubt as to the proportion of serious fires in London having greatly diminished in the last few years; recent instances of some very large fires, *Lovell* 6367–6370. 6381, 6382—— Great difficulty, or rather impracticability, of suppressing fires at large warehouses or wharves where there is an accumulation of combustible materials; instance in the case of the fire at Brooks' Wharf, *ib.* 6371–6380——Increase of mercantile rates through increase of mercantile fires, as in Tooley-street; economy on the other hand to the mercantile public by such fires being kept under by the municipal authority, *ib.* 6492–6499.

Evidence to the effect that during the last ten years there has been a distinct increase in the fire risk, though there may have been no increase of serious fires, *Tomkinson* 6750–6760 ——Increased

Report, 1876—*continued.*

Serious Fires—continued.

——Increased chance of very destructive fires on account of the increase of large buildings, *Tomkinson* 6757.

Effect of a large reserve force of police in preventing the occurrence or spread of many serious fires, *Harris* 8042–8044. 8052.

Shaw, Captain Eyre Massey. (Analysis of his Evidence.)—Experience of witness in charge of the Metropolitan Fire Brigade since its establishment in January 1866, he having previously had charge since 1861 of the former brigade of the insurance companies, 99–164——Extent of the establishment of the insurance companies' brigade, as handed over to the Metropolitan Board in 1866; total of thirty-eight fire engines and 131 men, 102–107——Maintenance of engines formerly by some of the parishes; very little use of many of these, 105.

Very extensive area served by the stations of the Metropolitan Board as compared with the area served by the insurance companies, 108, 109——Great increase of the establishment since its transfer to the Board; total of fifty-three stations, of 114 engines, and of 398 men, including all ranks, 110–112——There are also 106 fire escape stations, 110——Division of the metropolis into four districts with reference to the arrangement of the stations, each district being under a superintendent who is in telegraphic communication with all the stations in his district and with the central stations, 113.

Explanation of the course of proceeding on information reaching any station that a fire has occurred; means of ascertaining the amount of force to be despatched, 114–121——Connection of all the stations by telegraph, 115——Practice of not keeping more than one steam fire engine at the same station, 123——Arrival of the steam fire engines at fires after the manual engines; greater facility in getting the latter to work, 124–126——Opinion that the present force under witness is very weak, 127.

Annual number of fires (exclusive of chimney fires) in the period 1866–75; total of 1,338 in the former year and of 1,529 in the latter, 128——Explanation of the data upon which serious fires are distinguished from other fires; much larger proportion of serious fires in 1866 than in 1875; 129–138—— Reward of 1 *s.* given for a call to a fire, 139, 140——Total of 4,050 calls for fires in chimneys in 1875; liability of the occupier for a penalty of 1 *l.* in each case, 140, 141.

Means of supplying information as to the number of lives saved by the brigade since 1870, but not previously, 142——Transfer of the fire-escapes to the Metropolitan Board in July 1867; 143, 144——Voluntary calls on the part of the public, together with calls by the police, by means of which information is conveyed to the fire-escape stations and the engine stations, 145–153. 162——Explanation that the fire-escapes are attached in every case to the engine stations, and that there is one man on duty with every escape throughout the night, 145. 154–158——Prompt arrival generally of the escapes at fires, 159–161.

Statement of the number of houses and of inhabitants comprised in the area supplied by each of the eight water companies, 163——Extent to which the companies' turncocks are depended upon for turning on the required supplies at fires, the firemen being able to draw the plugs for themselves only where the supply is constant 165–176. 190–192——Occurrence of seventy-nine cases of short supply of water since 1st January 1866; 168, 169——Occurrence of 285 cases of late attendance of turncocks and of 222 cases of non-attendance; explanation hereon that witness has no fault to find with the turncocks, 168–176.

Great importance of a constant supply, which may be turned on at once, independently of the turncocks, 176–178——Few hydrants in London as distinguished from ordinary plugs, 179——Large districts now under constant supply by each company; total of 2,140 miles of streets supplied by the companies, whilst there are 671 miles of pipes under constant pressure, 181–189.

Conclusion that fires would be much more promptly and effectually dealt with if there were a constant supply all over the metropolis, the intermittent supply being attended with many difficulties, 193–202——Requirement of a supply of 2,000 gallons a minute, ready for immediate delivery, within such distance as fourteen engines can work on a fire, using not more than half a mile of hose, 203. 206–210——Very small diameter of the pipes in many districts, so that they could not deliver the required quantity 211,212.

Great importance of a multiplication of stations and engines, and of an increased number of men, so that the stations may be brought nearer to fires; report by witness in 1872, containing suggestions for an enlarged establishment, 213–230——Total of 931 men, 330 fire-engines, 200 fire-escapes, and 169 fire stations proposed by witness, 226–229——Suggested proportion of one steam engine for every four manual engines, 227, 228——Advantage of doubling the number of river engines, 230.

Valuable services which might be rendered by the police in the extinction of the smaller fires, if the force could be utilised for the purpose without causing a divided responsibility, 231–238——Contemplated use of the police chiefly in outlying districts and for

Report, 1876—*continued.*

Shaw, Captain Eyre Massey. (Analysis of his Evidence)—*continued.*

the suppression of small fires, 235–238——Advantage, in using the police for fire extinction, of the men being under the control of the brigade for the time being, 239. 242, 243——Expediency of the police having some small training in the handling of hose, &c. if they are to assist the brigade more extensively, 240–242.

Importance of improving the position of the brigade men as regards pay and superannuation in order to retain the services of trained men, 245–247——Explanation that fires where loss of life occurs are not classed as serious fires if they are on a small scale, 248, 249——Frequent reports made by witness to the Metropolitan Board with a view to an increase of stations and of men, from time to time; these shall be submitted to the committee, 250–254.

Rate of pay of the men in the different grades of the service; important increase since the transfer of the brigade to the Board, though hardly in proportion to the increase in the cost of living, 255–260——Assistance given to certain grades as regards lodgings, &c. 256——Comparative rates of pay in the police and in the brigade, 261, 262——Explanation that there is no superannuation scheme in force, though gratuities and pensions are given in special cases, 263–268——Reference to a return containing information as to the pensions, &c. up to 1874; facility of obtaining later and fuller information upon the subject from the books of the Metropolitan Board, 268–290.

Considerable difficulty in keeping up the force to the present authorised strength of 398 men, the pay and prospects not being sufficient to retain the men in the service, and the supply of efficient recruits being limited, 291–303——The force is now three short of its authorised strength, and there are no names in the applicants' book, 292–299——Continuous hours of duty of the men, inasmuch as if not actually at work they are required to be always in readiness for work, 304–307——Obstacle to a system of regular watches as in the police, 305, 306——Special importance attached to the establishment of a superannuation fund as a means of retaining the men in the force, 308–311.

Cost of about 25,000 *l.* incurred by the insurance companies for the old brigade, 314, 315——Total of 129 men transferred with the old brigade to the Metropolitan Board; large force in addition kept by the parishes, 316–329——Very small area served by the former brigade as compared with the area under charge of the Board, 330–333.

Estimate of 70,000 *l.* a year given by witness at the time of the transfer, as the cost of an efficient brigade for the metropolis; this included 574 men and 157 stations, 334–342——Second estimate by witness, the cost being 52,000 *l.* a year for 416 men and ninety-five stations, 343–348——Desire expressed by the Home Office that the cost should not exceed 50,000 *l.* a year; third estimate prepared by witness to this effect, comprising a force of 277 men, with 129 engines and eighty-nine stations, 348–355—— In the foregoing estimates nothing was allowed for fire escapes, 356.

Management of the brigade by a committee of the Metropolitan Board, comprising about one-third of its members, 357–367——Attendance of witness at every meeting of the Fire Brigade Committee, his advice being constantly given, but the Committee not always adopting his recommendations, and acting entirely on their own responsibility, 359–367——Transfer of the old brigade to the new without any charge having been made, 368, 369—— Understanding at the time of the transfer as to the existing stations being maintained, 370.

Particulars as to the force originally estimated by witness for Districts A, B, C and D, respectively, and as to the existing establishment in each district; great deficiency in each case as compared with witness' estimates, 371–420——Occurrence of the great majority of fires between seven in the evening and midnight; total of 188 men available during those hours at the present time, 421–426.

[Second Examination.] Witness delivers in to the Committee various reports made by him to the Fire Brigade Committee since 1866, asking for an increase of force, &c.; these do not include semi-official reports or letters addressed from time to time to different chairmen of the Committee, 492–503——Adoption of many of witness' recommendations, whilst some have been only partially adopted, and others not at all, 493. 497, 498——Annual report made by witness in addition to his special reports from time to time, 501.

Statement of the area, number of houses, and population in the several districts A, B, C, D; average of about seventy-six persons in every ten houses, 505–507——Very large area of the C district, which comprises the Tower Hamlets, and includes most of the docks and river side warehouses, 507–511——Total of thirty-eight men stationed in the C district, there being also a floating engine near the West India Dock entrance; average of about eighteen men available at night, 512–522. 525——Much larger number of fires in the C district than in any other district, 517, 518. 523, 524.

Satisfactory working of the system whereby it is left to the officer on duty at head quarters in each district to decide upon the force to be sent to any fire, 526, 527—— Limited extent to which there is telegraphic communication between police stations and fire brigade stations, an extension of such communication being very desirable, 528–532——

Efforts

Shaw, Captain Eyre Massey. (Analysis of his Evidence)—*continued.*

Efforts made by the police to convey intelligence of fires as quickly as possible, 529—— Great advantage if there were a large number of small stations; non-adoption of witness' recommendations on this point, 533–550.

Total of only fifty-three stations, including four on the river, whereas witness provided in his third estimate for fifty-two large and thirty-seven small stations, 535–550—— Advantage of contract stations manned by persons in the neighbourhood, so as not to distribute the force too much, 541–544——Steps taken in order to lodge the men at the stations, this, however, not being always feasible; stipulation in such cases as to their living as near the stations as possible, 551–560.

Longer time occupied in turning out to fires when the men do not live in the stations; about three and a-half minutes suffice for turning out when the men live in the stations, 560–567——Impracticability of providing accommodation for the men at the head station in Watling-street; special arrangement in order to obviate this drawback, not more than three and a-half minutes being required for turning out, whether by day or night, 568–571. 574. 581–583——Further statement as to the assistance given to the men in the shape of rent or partial rent; high rents necessary in some cases, 572, 573.

Long period for which the question of a new head quarters' station has been before the Board, witness having frequently reported in favour of a new station; resolution recently passed on the subject, 574–591——Want of a workshop at head quarters, whereas this is not feasible in Watling-street, 583——Expediency of the head quarters' station being in the centre of London, with good approaches to it, 584, 585.

Closing of some stations in important positions; instances of this, and reasons assigned, 592–615——Explanation in reference to the closing of the Wellclose-square station, near the docks, and of a station in Whitechapel, a new station having been provided near the latter; doubt as to any loss of facilities on the whole, 594–607——Advantage if a new station could be provided in Wapping in lieu of that in Wellclose-square, 603–606—— Objection made by witness to the removal of the Farringdon-street station, the position having been a very important one, 608–615.

Examination to the effect that allowing 130 men for working the 106 fire escapes, there are eighty-four men less than were originally estimated for by witness, though the population and houses have since increased by about 17 per cent., 616–630. 640, 641—— Provision made from time to time for working the increased number of fire escapes, 631–639——Large increase in the number of fires, though they have diminished in the last two years, 642–644——Instances of very large fires at which a great many men have been employed; question hereon as to there being staff available for coping with two large fires at the same time, without leaving the metropolis generally unprotected, 645–661.

Staff of five men attached to the Bow station, of whom only two are available at night to go out with the engine, 662–668——Exceptional amount of sickness under which, out of nine men attached to Holborn station, only one or two have been available to go to fires, 669–677——Relief obtained from another district in the event of any district having an unusual number of men on the sick-list, 678, 679.

Circumstance of the officers working as well as the men on account of the insufficiency of the latter, 680–682——Very energetic discharge of their duties by the men, the insufficiency of numbers being, however, a great disadvantage, 683–685. 709–712—— Frequency of men being on duty for twenty-four hours; instances of men on duty for sixty, seventy-four, 108, and even 120 successive hours, 686–695——Limited opportunities of the men on duty for lying down or getting any rest, 696–699.

Impracticability of subsequently making up to the men the time for which they have been at work over and above their usual hours, 700–703——Necessity of frequently sending fire-escape men out again after they have been on duty all night, 704, 705—— Decided objection to the fire escape duties and staff being altogether distinct from the rest of the brigade, 706–708——Statement as to the men not complaining of over work, though witness has made representations on the subject, 709–713——Frequency of men breaking down in health on account of the severity of the work, 714, 715.

Dissatisfaction of the men through the non-provision of a superannuation fund, 716–717. 791——Explanation that in the old brigade the first and second class men got fire rewards in addition to their pay, and that these men received as much on the whole as they now do, 718–737——Very liberal practice as regards gratuities and pensions, though there was no regular superannuation scheme, 738–743——Understanding in the brigade at the time of the transfer that the question of superannuation was to be placed on a satisfactory footing, whereas no definite scheme has yet been settled, 744–749.

Superannuation of four men since the transfer of the brigade to the Metropolitan Board, 750, 751. 777, 778——Case of Charles Radford who was a first-class engineer, and broke down in health after seventeen years' service; pension of only 16*s.* a week allowed by the Board, his pay having been 2*l.* 9*s.* a week, with his rooms, 752–772——Pension of 15*s.* a week in the case of Stephen Martin, a fireman, whose health failed after thirty years' service, 773–778.

Report, 1876—*continued.*

Shaw, Captain Eyre Massey. (Analysis of his Evidence)—*continued.*

Gratuity of 10 *l.* given to John Gibbs, discharged through ill health, after three years' service, 779——Gratuity of 4 *l.* 4 *s.* given to John Hill, discharged after ten months, in ill health caused by the service, 780-783——Gratuity of 10 *l.* to George Ray, whose leg was amputated through injuries considered not to have been received in the service, 784-786——Gratuity of 20 *l.* to William Henry Dayman, discharged in ill health after six years and four months in the service, 787-789.

Contribution by each man of 6 *d.* a week towards the savings fund, formerly called the Superannuation Fund, 792-798——Scheme of superannuation submitted by the Board to the men in February 1875, but rejected by them, on the ground that they were to be called upon to provide all the fund, 799-808——Further scheme recently submitted by the Board, but also rejected by the men; reasons assigned by the men for such rejection, and amended conditions proposed by them, 809-829——Belief as to the Board having engaged to contribute 500 *l.* a year to the proposed fund, 819.

Opinion that the maximum pension should be reached after thirty years' service, instead of thirty-five years, as proposed by the Metropolitan Board, 820-824. 828——Strong objection by the men to the proposal that a man must have attained the age of sixty before he can claim his discharge; concurrence of witness in this objection, 824-827.

Explanation that witness has not taken any active part in the superannuation movement, but has recently had an interview with the men on the subject, and is prepared to state their objections to the several clauses of the scheme proposed to be put in immediate operation, 829. 831. 835-837——Readiness of a considerable number of men to come before the Committee and to represent the objections felt in the force, though they are very unwilling to appear in any hostility to the Board under which they serve; invidious position in which the men would be placed as witnesses before the Committee, 830-834.

Witness submits a Paper containing the scheme of superannuation proposed to come into operation on 1st May 1876; 837——Further statement as to the objection by the men to the conditions in the scheme in regard to thirty-five years of service and sixty years of age; expediency of these conditions being amended, 837-839——Concurrence in the claim of the men to their allowances as well as their pay being calculated in their pensions, 839-841.

Amount of deduction proposed by the scheme from the pay of the various ranks; reduced amounts suggested by the men, 842, 843——Statement made to witness, on the part of the men, that a deduction of 2½ per cent. all round would be satisfactory to them; witness considers this is more than they can afford, 843-847——Circumstance of the Board not having invited the views of the men on the scheme now under consideration, 848.

Explanation in connection with the proposal by the men that service, for the purposes of the scheme, shall date from original appointment before transfer to the Board, 849-856——Amount of pension or gratuity proposed by the scheme in reference to length of service; alterations suggested by the men on this point, 857-859——Concurrence of the men in the proposals of the scheme in regard to the pensions to men disabled by injury received on duty, 859-862.

Proposal by the men, in which witness concurs, that in cases of loss of life whilst on duty, children under the age of fourteen, as well as widows, should be provided for, 863-868 Views of the men as to their fair claim to a return of the sums deducted if they leave the force, except for misconduct, and if they do not receive a pension or gratuity greater than the sum deducted; concurrence of witness in this conclusion, 868-871.

Objection to men being entitled to the same pension after so many years' service, irrespective of misconduct, 871-875——Full control of the men over the money at the credit of the savings fund, 876——Suggestion as regards the attendance of men from the brigade, that it will suffice to take evidence from one man in each rank, 877-879.

[Third Examination.]—Explanation that the men are of opinion that for incapacity the maximum pension should be attained at twenty-five years, and that without incapacity it should be attained at thirty years; that is, instead of at thirty and thirty-five years respectively, as proposed by the Board, 880-892——Explanation, also, that witness fully agrees with the men in their view that after twenty-five years' service their pension should not be entirely forfeited in the event of misconduct, 893-895——Witness, in fact, goes beyond the men's views on this point, and submits that at the end of twenty years they should get something for their service, in spite of misconduct; distinction, however, to be drawn between misconduct and gross misconduct, 893-914.

Further evidence as to the great importance of sufficient inducements to the men to remain in the brigade, and as to the much greater value of trained than untrained men, 900. 908, 909. 914. 916-926——Resignation of 640 men since the transfer of the brigade in 1866; 917, 918——Average cost of about 100 *l.* in order to give each man an efficient training; large sum represented by the loss of trained men, 922-926.

Great

Report, 1876—*continued.*

Shaw, Captain Eyre Massey. (Analysis of his Evidence)—*continued.*

Great difficulty in obtaining a sufficient number of efficient recruits as compared with the excess of applications before the transfer of the brigade, 927-934——Necessity of raising the age in order to get recruits, men being sometimes taken at thirty years of age and upwards, 935-937——Effect of a satisfactory superannuation scheme to produce once more a large list of applicants of the required age, 938-940——Necessity of advertising for men, 941.

Objection to a re-arrangement of the classes unless the total number of men be increased, 942, 943——Proposition that with an increased force the time in each class be limited to two years, so that after six years' service every man would get into the first class, if fit for promotion, 944-956——Suggested service of three months in the probationary class, 944. 948——Possibility under the foregoing scheme of the whole brigade consisting of first-class men; advantage anticipated, though increased pay would be involved, 948-956.

Claim on the part of the superintendents, which witness supports, to an increase of pay; expediency of assimilation to the pay of superintendents of police, 957-963. 989——Support, also, of the claims of the first-class and second-class engineers to an increase of pay, 964-977. 989——Table showing the original and increased rate of wages of the several classes with the per-centage of increase in each class, 978-981.

Liberal treatment of the men when temporarily disabled by sickness, full pay being allowed, 982, 983——System of fines for misconduct, there being no other deduction from pay except for rent; option exercised by witness as to the amount of each fine, 984-987. 990-994——Medical attendance provided for the men free of cost, 988.

Opinion that it would be true economy to have a force of 931 men, as estimated for by witness in 1872, at a cost of about 120,000 *l.* a year; material reduction of serious fires thereby, 995-1002——Grounds for the calculation that with the present stations and engines about 200 more men are required to render the brigade so far efficient; particulars as to the proposed distribution of this increase, 1003-1013——Estimate of 20,000 *l.* a year as the cost of an increased force of 200 men for wages; additional charge for lodgings and rent, 1014-1018.

Great assistance in the suppression of fires if some appliances were kept at every police station, and if the police could work with the brigade without the evils of a divided responsibility, 1019-1030——Particulars as to the loss of life by fire in London, and as to the number of lives saved by the brigade and the fire escapes; conclusion as to the expediency of inreasing the number of escapes to 200; 1031-1041——Advantage of two men for each escape, though this is not absolutely necessary, 1042-1044——Increased charge for wages, &c., which accounts for the present force not being so large as was estimated for by witness some years ago at a cost of 70,000 *l.* a year, 1045-1053.

Special body of the police at Liverpool who form the fire brigade; doubt as to the cost of the proportion of serious fires, 1052-1058. 1075——Acquaintance of witness with the fire extinction arrangements in the chief cities on the continent and in America, as well as in England, but without seeing anything in those arrangements which he can recommend for adoption in London, 1059-1074——Force of about 1,600 pompiers in Paris, who act also as soldiers, 1068, 1069——Suitable arrangements in Hamburg, though not applicable to the different conditions of London, 1070-1074.

Important improvement in the water supply of London since 1867; 1077——Provision of some hydrants by the Metropolitan Board, 1078, 1079——Total of thirty-two cases in 1875 in which the water arrangements were unsatisfactory, 1080——Late attendance of the turncocks in nineteen cases in 1875, whilst in nine cases there was no attendance, 1080-1082——Difficulty as to the firemen obaining supplies of water, through not being acquainted with the arrangements or the pipes, 1083-1085.

Statement as to the water companies having frequently offered to pay for the housing of the turncocks at the fire-brigade stations; obstacles to this arrangement, though it is very desirable that the turncocks should live within easy reach of the stations, 1086-1094. 1303-1305——Doubt as to the advantage of informing the companies in each case of late attendance of the turncock, 1095-1097——Circumstance of the position of the fire-plugs not being now properly marked in all cases, 1098-1103.

Large portion of the district of the East London Company under constant supply, witness being very doubtful, however, as to the expediency of the Metropolitan Board laying down hydrants over only a small portion of the metropolis, 1104-1112——Further diminution of the severity of fires if the brigade be increased, 1114, 1115——Belief that very few fires are really fraudulent, though fraudulent claims may be very numerous, 1116——Practice of witness not to return any fires under the head of "incendiary," unless they have been so proved; liability of him or his men to be called as witnesses, 1117-1123.

Opinion that, on the whole, the docks are as well protected as they were before the removal of the Wellclose-square station to the Commercial-road, 1124-1131. 1356-1357——Enlistment, exclusively, of sailors for the brigade, 1135, 1136—Careful medi-

Report, 1876—*continued.*

Shaw, Captain Eyre Massey. (Analysis of his Evidence)—*continued.*

cal examination of recruits, 1137——Necessity of relying on the police and the general public for conveyance of information to the brigade stations when a fire occurs, 1138——Inability of witness to show the value of property annually destroyed by fire, 1139——Doubt as to any prejudice to the public by the withdrawal of the police from their beats during fires, 1140-1142.

Reduced hours of duty with the fire escapes during the four months from May to August, 1143——Three different modes of horsing the brigade, there being no horses actually belonging to the brigade, 1144, 1145——Instances in Bermondsey and Rotherhithe of defective water supply under the intermittent system, 1147-1150.

Varying number of men with each river engine, according to the size, 1154——Length of about 22½ miles of river protected by four engines, witness having proposed an addition of four engines, 1155-1159——Very heavy work occasionally for the river engines, 1160——Time occupied in repairing the floats; temporary arrangement made whilst one float was a very long time under repair, 1161-1164——Objection to the abolition of any of the present floats, though new ones ought to be of a smaller size, 1165, 1166——Sufficiency of a speed of eight or nine miles an hour, 1167——Valuable assistance rendered by the Thames Conservancy and the Thames Police, 1168, 1169.

Absence of any rule by which serious fires are to be determined, 1170, 1171——Objection to pecuniary rewards to the men as compared with an honorary badge or medal, 1172, 1173. 1358, 1359——Estimate of 1,200,000,000 *l.* as the value of the uninsured property in London, the insured property being 540,000,000 *l.*, 1175-1178——Several private engines in different parts of London which give assistance according to their ability, 1179-1181——Decided unwillingness of the insurance companies to prosecute for arson, 1184.

Holiday of witness for about a month every year, 1185, 1186——Want of two more superintendents, 1187, 1188——Leave for about fourteen days given to the superintendents, 1189——Cognisance generally of the men as to the position of the mains, 1190-1192——Obligation upon the water companies to supply water gratuitously for the use of the brigade, 1193, 1194.

Approval of an inquiry by the police in certain cases of suspicious fires, though there may be no loss of life; witness could not undertake to prosecute, 1195-1203——Instances of complaints by men who have not been rewarded for saving life, though recommended to the Board, 1204-1206——Circumstance of the Fire Brigade Committee not having made inquiry into the detailed management of the force, 1207, 1208.

Reference to a letter from the Home Office to the Metropolitan Board, dated 27th March 1865, as laying down the financial basis for the establishment of the brigade, the annual cost having been placed at 50,000 *l.*, 1211-1213——Further explanations in connection with the three schemes and detailed estimates submitted by witness to the Home Office; reference especially to the third estimate as having provided for 351 officers and men (and not for 277), 1214-1232.

Opinion that the principle of distribution of force has been carried too far, though witness cannot say there has been neglect in the matter of concentration, 1233-1237——Much larger amount now paid in salaries than was allowed for in witness' gross estimate of 50,000 *l.* a year, 1238-1242——Great increase in the cost of horse-hire as compared with witness' estimate, 1243-1251——Large increase also beyond witness' estimate for rent and taxes, 1252, 1253——Two-fold increase of cost, as compared with witness' estimate for coals, 1254-1256——Very large increase also for maintenance of engines, 1257, 1258.

Careful economy exercised generally by the Fire Brigade Committee, with due regard to efficiency, 1259, 1260——Opinion that witness' estimates should now be increased by 50 per cent., on account of the advance in wages and other items, 1261-1266——Considerable capital outlay required in order to provide engines, stations, &c. for the larger scheme, estimated by witness to cost 12,000 *l.* a year, 1267-1273——Doubt as to the extent of benefit to the insurance companies by a more costly and efficient brigade, as the premiums are arranged according to the risk, 1274, 1275.

Instances of late attendance at fires owing to the distance of the stations; instances also of loss of life through delay in the arrival of fire escapes, 1280, 1281——Statistics as to the number of fires during the last ten years and at different hours of the day; total of 15,907; 1282-1290——Value of an increased number of stations and of engines as a means of preventing exceptionally great calamities, and of reducing the proportion of serious fires; room for reduction on the latter score, 1291, 1292. 1295-1302.

Expediency of only one brigade for the entire metropolis, 1293, 1294——Statement the greatest distances from the stations at which fires might occur in the different districts; distance of more than a mile in some instances, 1307-1318——Heavy work in the suburban and outlying districts, though the fires are not numerous, 1319, 1320——Adoption of witness' recommendations to the Board as to promotions and dismissals, the discipline being entirely in his hands, 1321, 1322.

Further

Report, 1876—*continued.*

Shaw, Captain Eyre Massey. (Analysis of his Evidence)—*continued.*

Further evidence as regards recruiting, to the effect that sailors can be got in numbers, but that the resignations are so numerous as to cause much difficulty, 1323, 1324. 1331–1340. 1343, 1344——Reasons for preferring sailors, exclusively, 1325–1330——Maximum limit of thirty years of age now in force, 1341——Summary of the conditions required in candidates, 1342——Increase of about fifty per cent. for wages if the force be increased by 200 men, and if promotion takes place after two years in each class, 1345–1348.

Inquiry made by the Board before deciding that it was not expedient, under existing conditions of water supply, to put down hydrants to a large extent, 1349–1351——Opinion that at present the brigade could not be reduced, no matter how many hydrants may be put down, 1352——Failure of an attempt to procure a site near the docks for the station removed from Wellclose-square, 1353–1355.

Explanation as regards the pension awarded to Radford, that witness cannot say what the relative pension in the police would be, 1360——Negotiations of the Board with the men upon the superannuation question without witness' advice having been asked, *ib.*——Reference to the injury to Ray as having happened whilst he was, in witness' opinion, on duty in the brigade, 1361, 1362.

[Fourth Examination.]—Grounds for the proposal that when a man becomes entitled, by length of service, to a full pension, he should no longer be called upon to contribute whilst he remains in the brigade, 1363–1367——Explanation that besides the deductions from pay for rent and fines, there is a deduction for savings, and that during suspension for misconduct the whole pay is stopped, 1367–1373——Further statement as regards the pension to Radford, that his position was analogous to that of a chief inspector of police, and that on this basis he should have received a larger pension than 16 *s.* a week, 1373–1386. 1502, 1503.

Data for the conclusion that a trained fireman is worth 100 *l.*, 1387–1389——Important reduction effected since 1866 in the proportion of serious fires, further reduction being feasible by means of a multiplication of stations, 1390–1393——Higher pay of firemen than of policemen, the fourth class receiving, however, only 6 *d.* a week more than the lowest class of policemen, 1394–1396——Approval of the fourth class being treated as a probationary class, 1397–1399.

Advantage if recruits could be got at from seventeen to twenty-five years of age, though witness is now taking them at thirty, 1400–1401——Objection to a limit of age for compulsory retirement, though there should be a limit of service entitling to a pension, 1402–1403——Approval of the name and address of the turncock being advertised on the street lamps, as is done by the St. George's Vestry, 1404–1409.

Explanation that in asking for an available water supply of 2,000 gallons a minute, witness has not considered whether this would not involve an enormous cost, 1410–1416——Small loss of property in 1875 by reason of short supply of water in four instances, 1412–1414. 1417——Opportunity of large owners of property to secure a constant supply by means of sealed cocks directly from the main, 1419–1421——Conclusion that many more than half the lives saved at fires are saved by the firemen, 1422, 1423.

Fair share of protection given to the docks, 1424–1427——Large reduction in the number of stations in the district comprising the warehouses and docks, 1428–1435——Satisfactory service rendered by the floating engine at the fire at the King and Queen Warehouses, Rotherhithe, 1436–1441——Decided objection to dispensing with the large floating engine, though it is desirable to have some small floats as well, 1442–1444——Long period for which the question of small floats has been before the Metropolitan Board; plans are now drawn up, 1444–1450.

Large increase since 1866 in the contribution by the insurance companies to the cost of the brigade, 1451, 1452——Opinion as to the unfairness of taxing the insurance companies; doubt on the other hand as to their having a right to be represented in the management of the brigade, 1453–1459——Great reduction since 1866 in the per-centage of fires from causes unknown; increased facility in ascertaining the causes of fires, 1460–1471.

Large increase since 1866 in the strength of the brigade, whilst it is generally in an improved and efficient condition, 1472–1480——Wise expenditure by increasing the pay of the men, by improving the promotion, and by establishing a superannuation fund so as to retain them in the service, 1479–1486. 1491. 1586——Further suggestions as to the constitution and administration of the fund; objection to its being composed entirely of the men's contributions, and being managed by them, their pay being made sufficiently liberal for the purpose, 1487–1495——Inexpediency of its resting with a committee of the men to decide the amount to be given in gratuities, out of funds contributed entirely by themselves, 1494–1501.

Further statement as to the disagreement between the men and the Board upon the question of length of service before superannuation, the men objecting also to a service up to sixty years before they can claim a pension, 1504–1508——Suggestions with further

Report, 1876—*continued.*

Shaw, Captain Eyre Massey. (Analysis of his Evidence)—*continued.*

reference to the increased aid which may be given by the police at fires, as by laying down the hose, &c., 1509–1512.

Doubt as to the Salvage Corps preventing the occurrence of many fires, though they exercise supervision at the docks, &c.; they give no relief to the brigade in the sense of lightening the more onerous duties of the latter, 1513–1525——Large increase of protection given to the docks out of the increased expenditure upon the brigade, without any neglect, however, of the metropolis generally, 1526–1537.

Accuracy of a statement by witness in 1862 that a want of water had been experienced in only two instances out of about 600 fires, 1538–1541——Testimony to the zealous efforts of the water companies as to the supply of water for fires not only previously to 1867, but down to the present time, 1542.

Views of witness in 1867 and at the present time as to the unfitness of the fire plugs as a mechanical arrangement for getting access to water for fires, 1543–1550——Great value, doubtless, of hydrants where the mains are constantly charged at a good pressure, witness concurring, however, in the decision of his Board, that it is not expedient to apply them extensively in the metropolis whilst large portions of the districts remain under intermittent supply, 1551–1562——Advantage of a pressure equal to about 300 feet; question as to the effect upon the pipes and mains, 1563–1568.

Conclusion further expressed as to the expediency of a power to hold inquests on fires, even though there may not have been any loss of life, 1569–1573——Careful inquiry by witness into the causes of fires, carelessness in some shape being almost the sole cause, 1574, 1575——Few, if any, cases of spontaneous ignition, 1576, 1577——Total of only ninety false alarms in 1875; 1578, 1579.

Want of opportunities of relieving the men on Sunday, 1580, 1581——Increasing number of applications from recruits, the resignations on the other hand being very large, 1582–1586. 1747–1750——Large area and population of Marylebone adverted to in connection with the number of stations in the district, 1587–1591.

Four important stations in Southwark, there being several others within easy reach, 1592, 1593——Examination to the effect that many fires occur in Southwark, near the river, and that the service pipes throughout the district are much too small to give a sufficient supply of water for the purposes of the brigade, 1594–1650——Reference to the Tooley-street fire (before witness' time) as one at which the supply of water was said to be insufficient, 1598–1601. 1622, 1623——Prompt action of the floating engines on arrival at river-side fires, 1603–1607. 1681, 1682. 1684——Limited demands upon the water companies as to the domestic supply in the Southwark river-side district; conclusion that they cannot be expected to lay down larger pipes specially for fire extinction purposes unless they are paid for doing so, 1608–1643. 1702–1704——Every possible assistance is given by the companies, so far as their means permit, 1635, 1636.

Expediency of effectual protection against fire whether property is insured or uninsured, 1644——Necessity of larger service pipes in the Southwark waterside district, in reference to fires, if there were a constant supply, 1645–1650——Opinion that as regards the question of waste it is true economy to have a constant service, 1651——Further reduction in the number of fires from unknown causes if the brigade be properly strengthened, 1652——Reduced size of fires and reduced losses if there were a constant pressure system of water supply, with local facilities for prompt use of appliances, 1653, 1654. 1677–1680.

Concurrence in the view that fires may be much diminished by establishing numerous call-points, in conjunction with prompt action by the local police, 1655–1664——Valuable use to be made of the stand points of the police; importance on this score of telegraphic connection between the police stations and brigade stations, 1659–1676——Advantage of a supply of hand pumps for use by the police on the first outbreak of fires; that is, if there were a constant service, 1665–1667——Means of hastening the arrival of the floating engines at fires near the river, 1683–1685——Want of some small floats, though none of the large ones should be dispensed with, 1686–1688.

Further statement as to witness having never recommended gratuities to the men for specially efficient services, but having preferred a badge of merit, 1689–1693——Limited success hitherto of chemical processes for the extinction of fires; anxiety of witness to avail himself of such processes when properly matured, 1694–1697——Destructive effect of chemical solutions when applied to various kinds of goods at fires, 1696, 1697——Value further attached to an improved central station whence to work the whole brigade, 1698–1701.

Statement as to witness having frequently recommended additions to the *personnel* of the brigade, as preferable to spending the money on increased buildings and stations; explanation as to his not having mentioned the latter point in his reports as the less pressing of the two requirements, 1705–1718.

Very limited extent to which public buildings in the metropolis are under special watch by the fire brigade, whilst there are no men available for keeping guard in theatres, music halls,

Report, 1876—*continued.*

Shaw, Captain Eyre Massey. (Analysis of his Evidence)—*continued.*

halls, &c., 1719–1734——Private arrangement for the protection of the British Museum, 1726–1728——Importance of some better protection of places of amusement; on the continent such places are usually in charge of the fire brigade, 1729–1731.

Way in which a superannation scheme would be more effectual than increased pay in retaining men in the force, 1735–1736——Frequent resignations in order to enter other brigades where better terms are held out, 1737–1739——Supply of a uniform once a year, in addition to the wages, 1740, 1741——Objection to the Registry Office as the site for a central station, though it would be a better site than the present one, 1742–1744——Reference to the amount derived from fines as still being in the hands of the Board, 1745, 1746.

Preference for sailors from the merchant service, though in America and on the continent soldiers are generally employed, 1747, 1748. 1751–1759——Large number of firemen, so called, in cities in America; these are not regularly trained, and follow other occupations as well, 1753, 1754——Calculation showing that only 1 *d.* is expended annually in the protection of every 65 *l.* in value, whereas the expenditure for insurance is about 23 *d.*; 1760.

[Fifth Examination.]—Inaccuracy of the statement by Mr. Swanton as to the Metropolitan Board having purchased four floats, 8089–8091——Correction of portion of Mr. Swanton's evidence relative to the fire at the Pantechnicon, 8091——Disapproval of Mr. Swanton's suggestion, that at some stations there should be only steam engines, witness submitting that there should be a manual engine at every station, 8091–8093——Inaccuracy of a statement by Mr. Swanton that formerly there was never more than one man to each fire escape, 8093.

Unfair and unjust evidence of Mr. Swanton as regards the duties and hours of labour of the fire brigade men, 8093, 8094——Explanation that Mr. Swanton has not served in the brigade as it now exists under the Metropolitan Board, save for a month or so, 8094–8096——Want of proper opportunities on the part of Mr. Swanton for distinguishing between men of the navy and merchant seamen as regards fitness for the fire brigade, 8095, 8096——Very inadequate staff proposed by Mr. Swanton for the central station, 8096, 8097.

Shaw, Captain. Papers submitted by Captain Shaw in elucidation of his evidence on various points, *App.* 602 *et seq.*

Shaw, George. (Analysis of his Evidence.)—Active part taken by witness as chairman for more than three years of the Gas and Water Committee of the Court of Common Council, 6165–6168——Report submitted by the Committee to the Court in July 1874, upon the subject of the water supply to the City, and the question of fixing hydrants upon branch pipes attached to the constantly-charged mains, 6168–6171——Total of seventy-eight miles of water pipes in the City, twenty-five miles being constantly under pressure, 6171, 6172——Sufficiency of service pipes of from four to six inches with reference to the use of hydrants, 6173, 6174.

Main object of the Report of the Gas and Water Committee to secure a proper supply of water wherever a hydrant was attached, 6174——Information obtained from the New River Company as to the sufficiency of the pressure in the service pipes, 6175——Great pressure at which the New River Company could supply, but for the injury to house pipes, 6175. 6263–6265——Explanation that the ordinary sustained pressure in the City is 126 feet 6 inches above Trinity high-water mark, 6175, 6176. 6270.

Particulars relative to some hydrant experiments at Christ's Hospital as carried out by witness; satisfactory results shown, 6177–6192. 6251, 6252——Very satisfactory results shown also by some hydrant experiments at the Temple, carried out by the Temple surveyor, 6193–6196. 6203, 6204——Advocacy of hydrants as a means of preventing the rapid spread of fires by the instant application of water under constant supply; it is not proposed to do away with fire engines, 6196–6200. 6229, 6230——Illustration of the great value of hydrants in the case of the fire in Bunhill-row, 6197–6199.

Ample supply of water to the City for the efficient working of a system of hydrants, 6200——Satisfactory height to which the water rose upon the occasion of an experiment with the hydrant at Warwick-square, near Christ's Hospital, 6201, 6202——Advantage of 6-inch service pipes, rather than 4-inch, if they are carried to any considerable distance from the main before the hydrant is fixed, 6204, 6205——Non-interference with the intermittent supply for domestic purposes by having separate service pipes for hydrants, with a constant supply, 6206–6208.

Calculation that by laying the proposed service pipes and hydrants gradually as the streets are being repaired or paved, the cost for the whole City will not exceed 20,000 *l.*; 6208–6215. 6226, 6227. 6258–6262——Great increase of expense if the streets are opened expressly for the purpose of connecting the service pipes, 6208–6211——Sufficiency of the pressure at the Bank of England and other banks in the City for the efficient working of hydrants, 6215–6219.

Report, 1876—*continued.*

Shaw, George. (Analysis of his Evidence)—*continued.*

Various kinds of hydrant from which to select; advantage of the 3-inch size, 6220, 6221. 6276, 6277——Opinion that the cost of putting down each hydrant will not exceed 10*l.*, this being exclusive of the cost of the service pipe, 6222–6226——Authority obtained from the Corporation for an outlay of 5,000*l.*, branch pipes being laid as the streets are being re-paved: good progress being made, 6227–6229——Intention to have supplies of hose, easily accessible, for attaching to the hydrants, 6230-6234.

Satisfactory height to which water was thrown from hydrants attached to the pipes of the Kent Waterworks Company at Deptford, 6235-6237——Value of hydrants and service pipes as a means of always ensuring a supply of water in the event of fire; absence, however, of any failure of supply in the City, 6238–6240——Facilities to be rendered by the City police in aid of the fire brigade, 6241-6244.

Explanation that the City is now doing at its own cost (in the provision of hydrants) what might have been done by the Metropolitan Board under the Act of 1865, at the cost of all the metropolitan ratepayers, 6245–6248. 6268, 6269. 6292——Serious expense apprehended by an amalgamation of all the water companies, 6249, 6250——Intention to place hydrants within at least 100 yards of each other; many would be put up at corners of streets, 6253, 6254.

Uniform kind of hydrant proposed to be used, with the fire brigade screw, 6255, 6256——Economy in laying down hydrants in St. Paul's, the pavements not being disturbed, 6256–6258——Intended application of two hoses to each hydrant, 6259——Pressure of only forty feet in height, professed to be given by the East London Company; usefulness, however, of hydrants and service pipes with a very low pressure, 6265, 6267. 6282–6285——Total of about 700 hydrants in private establishments in the City, 6271–6273——Reference had by the City authorities to the value of property in selecting places for hydrants, 6274, 6275.

Progress being made in laying down public hydrants in the City; intention to provide about 900; 6278–6281——Distribution of the hydrants so that one will be within fifty yards of the street front of every house, 6286–6289——Facility of applying to the whole metropolis the system of hydrants proposed for the City, 6291. 6304——Large increase of expense for renewal when a pipe burst in a street which is asphalted instead of paved with granite, 6294-6299——Further explanation that it is proposed to attach the hydrants to service pipes from the constantly-charged mains, so that there will be no interference with the intermittent supply, 6300–6304.

Shooter's Hill. Recent opposition by witness to a new station at Shooter's Hill; use which might be made of the local police station, *Richardson* 4791——Explanation with further reference to witness' objection to a new station at Shooter's Hill, *ib.* 4984-4986——Exception taken to the proposed station at Shooter's Hill, so far as the interests of the insurance companies are concerned, *Lovell* 6322-6420.

Sick List. Relief obtained from another district in the event of any district having an unusual number of men on the sick list, *Captain Shaw* 678, 679——Liberal treatment of the men temporarily disabled by sickness, full pay being allowed, *ib.* 982, 983.

See also *Medical Attendance.*

Sloane Square. Explanation with reference to the closing of the stations at Sloane-square and Horseferry-road, the former station having been closed in the face of strong objections thereto by Captain Shaw; correspondence on the subject between the clerk of the Board and Captain Shaw in December 1868, *De la Hooke* 3491, 3492. 3502–3513——Belief that there has been no evil result from the closing of Sloane-square station, *ib.* 3514.

Examination upon the question whether certain fires which have occurred since the removal of the Sloane-square station would not have been more promptly and effectually dealt with had that station not been closed, *De la Hooke* 3652–3685. 3841, 3842——Statement showing that Captain Shaw made no objection in the first instance to the removal of the station, whilst he approved of the sites at Victoria-street and South Parade; large facilities provided at the latter stations, *ib.* 3819-3834——Several fire escape stations in the districts near Sloane-square, *ib.* 3835–3837.

Smart, ——. Explanation as to compensation not having been awarded to a man named Smart, in respect of previous service, such service not having been allowed to count in the case of men taken over from the Society for the Protection of Life from Fire, *De la Hooke* 3755, 3756——Particulars relative to the case of Smart, formerly in the service of the Greenwich parochial authorities, who received 10*l.* as compensation on leaving the brigade in ill-health, *Richardson* 4574–4587.

Southwark. Four important stations in Southwark, there being several others within easy reach, *Captain Shaw* 1592, 1593——Examination to the effect that many fires occur in Southwark near the river, and that the service pipes throughout the district are much too small to give a sufficient supply of water for the purposes of the brigade, *ib.* 1594–1650.

Limited

Report, 1876—*continued.*

Southwark—continued.

Limited demands upon the water companies as to the domestic supply in the Southwark riverside district; conclusion that they cannot be expected to lay down larger pipes specially for fire extinction purposes unless they are paid for doing so, *Captain Shaw* 1608–1643. 1702–1704——Necessity of larger service pipes in the Southwark waterside district in reference to fires if there were a constant supply, *ib.* 1645–1650..

Southwark and Vauxhall Water Company. Explanations and suggestions on the part of the company in 1866 upon the question of the water supply, in reference to fires; objections to a constant supply at high pressure throughout the whole district, *App.* 667, 668.

Special Pay. Considerable number of men in receipt of special pay of 3 *s.* 6 *d.* a week, in addition to their wages, *De la Hooke* 3391–3397.

Spontaneous Ignition. Few, if any, cases of spontaneous ignition, *Captain Shaw* 1576, 1577——In 1875 there were sixteen cases of alleged spontaneous combustion, but witness was not satisfied with the proof tendered in any case, *ib.* 1576.

Staff. See *Strength of the Brigade.*

Stand-pipes. Improvement if stand-pipes were substituted for plugs, *Port* 2030, 2031——Explanation as to the Board not having complied with a recommendation of Captain Shaw for supplying the turncocks with stand-pipes, *De la Hooke* 3258–3261——Adoption by the Board of a report by Captain Shaw, in November 1874, recommending that twelve stand-posts should be placed in a certain district of the Kent Waterworks Company, *ib.* 3303, 3304.

Considerable cost for stand-pipes if provided according to Captain Shaw's requirements, *Sir J. W. Bazalgette* 5730, 5731.

Recommendation by Captain Shaw, in report of 3rd December 1868, that every turncock be supplied with a stand-pipe which he could insert into a convenient plug immediately on his arrival at any fire, *App.* 616, 617——Further report, dated 28th January 1869, as to the cost of the proposed stand-pipes, *ib.* 617.

STATIONS:

1. *Importance attached to a Multiplication of Stations; extent of Increase since* 1866.
2. *Suggested establishment of Small or Sub-stations.*
3. *Closing or Removal of Stations since the Transfer of the Brigade to the Metropolitan Board; Complaints on the part of the Insurance Offices as to the Removal of Stations from the Centres of Insured Property.*
4. *Expenditure on Stations and Repairs.*
5. *Accommodation for the Men.*
6. *Distribution of Fire Brigade Stations and of Police Stations.*

1. *Importance attached to a Multiplication of Stations; extent of Increase since* 1866:

Great importance of a multiplication of stations; report by witness to this effect in 1872, *Captain Shaw* 213–230——Particulars as to the number of stations, &c. estimated for by witness in the several districts, and as to the much smaller number provided, *ib.* 374–420——Total of only fifty-three stations, including four on the river, whereas witness provided in his third estimate for fifty-two large and thirty-seven small stations, *ib.* 535–550.

Instances of late attendance at fires owing to the distance of the stations; instances, also, of loss of life through delay in the arrival of fire escapes, *Captain Shaw* 1280, 1281——Statment of the greatest distances from the stations at which fires might occur in the different districts; distance of more than a mile in some instances, *ib.* 1307–1318.

Value of a multiplication of stations in further facilitating prompt attendance at fires, *Hamlyn* 1781–1784——Prospect of an increase of stations, there being an available surplus this year of from 5,000 *l.* to 6,000 *l.* for the purpose, 4215, 4216——Explanation that an increase of stations does not necessarily involve an increase of annual charge, *Richardson* 5110.

Increase of stations by the Fire Brigade Committee so far as their means permitted, *Thompson* 5151——Value of an increased number of stations, so that fires may be promptly reached and checked before they become serious, *ib.* 5152–5157——Reference to the Fire Brigade Committee of the question of additional stations, the committee reporting to the Board, and their recommendations being usually carried out, *ib.* 5178–5192.

Report by Captain Shaw, dated 6th January 1872, recommending places for new stations, and showing the distance of the nearest existing station to the place proposed in each

Report, 1876—*continued.*

STATIONS—continued.

1. *Importance attached to a Multiplication of Stations, &c.*—continued.

each case, *App.* 620——Further report, dated 5th February 1872, in reference to the population to be served by each new station, *ib.* 620–622.

Number of stations on the 1st January in each year since 1866; increase from seventeen to forty-eight, *App.* 639.

2. *Suggested establishment of Small or Sub-Stations:*

Great advantage if there were a large number of small stations; non-adoption of witness' recommendations on this point, *Captain Shaw* 533–550——Importance attached to an increase of small stations, with three or four men at each; great improbability of a second call at the same small station when temporarily closed after the first call, *Freeman* 4312–4319.

Opinion that the number of engine stations in London should be doubled; that is, by the addition of small or sub-stations, *Swanton* 6964–6970——Importance of numerous small stations at which hose and other apparatus should be kept, to be used upon the first outbreak of a fire, *ib.* 6970. 6982–6986.

Preference further expressed for an increased number of stations with smaller appliances, rather than for a concentration of stations and of plant, *Swanton* 7233, 7234——Expediency of providing four stations with one engine, and four or five men at each, rather than of spending the money available upon one large station; sufficiency of 10,000 *l.* in the former case, *ib.* 7309–7314.

3. *Closing or Removal of Stations since the Transfer of the Brigade to the Metropolitan Board; Complaints on the part of the Insurance Offices as to the Removal of Stations from the Centres of Insured Property:*

Understanding at the time of the transfer as to the then existing stations being maintained, *Captain Shaw* 370——Closing of some stations in important positions; instances of this, and reasons assigned, *ib.* 592–615.

Less concentration of the stations in the midst of large masses of insured property since the transfer; reduction, also, in the number of such stations, *Richardson* 5082–5089——Conclusion as to the Metropolitan Board being better qualified than the insurance companies to judge as to the proper localities for stations, *ib.* 5090–5093.

Object of the stations formerly maintained by the companies to afford protection to particular classes of property, and not to protect the metropolis generally, *Lovell* 6310, 6311. 6318, 6319; *Tomkinson* 6689——Failure of witness' efforts to introduce a clause into the London Fire Brigade Act providing for the continued maintenance of the stations as established by the companies, *Lovell* 6317, 6318——Frequent representations made by witness to the Metropolitan Board relative to the removal of stations, the excuse being that the Board has not sufficient funds to maintain them all, *ib.* 6319, 6320. 6324–6328.

Further statement as to the outlying districts not possessing anything like the same interest for the companies as the large wharves and warehouses, whereas the latter are not so well protected as they used to be, *Lovell* 6397. 6436–6445. 6464–6467—— Abolition of two of the old strations of the companies whilst two others have been removed, *ib.* 6436. 6444——Inaccuracy of some evidence as to the larger portion of the insured property being in the suburbs, *ib.* 6438, 6439——Belief that it was fully understood when the brigade was transferred that the more central stations should all be maintained, though there may have been no written stipulation on the subject, *ib.* 6552–6557.

Further statement as to the antagonism of interests between the officers and the Metropolitan Board, the former contending for stations where there are accumulations of insured property, and the latter having in view the protection alike of all parts of the metropolitan area, *Lovell* 6645–6652. 6658, 6659——Less protection of crowded districts since the removal of some of the stations, as the engines cannot arrive so promptly at fires, *ib.* 6682, 6683.

Occurrence of some instances in which the London companies have considered that less protection was given by the Metropolitan Board than was formerly given by the companies' brigade, *Tomkinson* 6699——Interest of the Board to disperse the stations, whereas it was the interest of the companies to concentrate them where large masses of property were accumulated, *ib.* 6700. 6701——Absence of any written undertaking on the part of the Board that the same protection would be given as formerly, though this was fully expected by the companies as a condition of their contribution, *ib.* 6702, 6703.

Circumstance of there having been ninety-eight stations in useful operation when the brigade was transferred to the Metropolitan Board; valuable services rendered by the parish engines at many of these stations, as being nearer than the present stations to the scene of the fires, *Swanton* 7000–7012——Complaint as to the Metropolitan Board having removed stations formerly established by the companies near large accumulations of property, and as to fires having since occurred which have not been so promptly dealt with through the stations having been removed, *ib.* 7074 *et seq.*

Probability

Report, 1876—*continued.*

STATIONS—continued.

3. *Closing or Removal of Stations since the Transfer of the Brigade*, &c.—continued.

Probability of the new stations formed by the Metropolitan Board having prevented some destructive fires in their immediate locality; instance in the case of the fire at Watney's brewery, the station at Victoria having proved very useful, *Swanton* 7106–7108. 7293–7299——Diminished losses which the companies would have had to meet if the former stations in crowded neighbourhoods had been retained, *ib.* 7109–7111——Very few fires hitherto in the immediate neighbourhood of the stations removed from Farringdon-street and other places, *ib.* 7207–7209.

Advantage of the old stations at Farringdon-street and other points, as having been well known to the public, so that the latter speedily conveyed news of fires, *Swanton* 7306–7308——Complaint further made in regard to the removal of stations from the vicinity of large masses of valuable and insured property, *ib.* 7354–7358.

4. *Expenditure on Stations and Repairs:*

Total expenditure of 115,399*l.* on stations by the Metropolitan Board, *Gunn* 5548——Total of 14,824 *l.* expended in repairs and alterations of stations, *ib.* 5548–5552.

Return showing the amount of first cost of the several stations in the period 1866–75; total of 98,761 *l.*, *App.* 677——Return of the several stations in use on 31st December 1875, showing rental, &c., cost of erection, and amount expended in alterations and repairs, *ib.* 678.

5. *Accommodation for the Men:*

Erection of thirty stations since 1865, several of which do not provide sufficient accommodation for the men; this does not apply to those built since 1869, when the previous limit as to capital outlay was removed, *De la Hooke* 2978–2981.

6. *Distribution of Fire Brigade Stations and of Police Stations:*

Map of London setting out the different stations of the fire brigade and the police stations, *App.* 6010.

See also *Contract Stations. Crown-street Station. De Beauvoir Town and South Hackney. Distribution of Stations, &c. Docks. Farringdon-street Station. Horseferry-road Station. Hours of Duty. Kennington-lane Station. Lodging the Men. Police. Sloane-square Station. Southwark. Suburban Districts. Telegraphic Communication. Vestries. Waterloo-road Station. Wellclose-square Station. Wells-street Station. Woolwich Station.*

Steam Engines. See *Engines. Floating Engines.*

Stoke Newington. Report by Captain Shaw, dated 5th February, 1872, as to the want of a fire escape station at Stoke Newington, *App.* 650.

Stone's End (*Southwark*). Great advantage if appliances for suppressing a fire in the neighbourhood of Newington Causeway were kept at the police station at Stone's End, *Swanton* 6985, 6986.

STRENGTH OF THE BRIGADE:

1. *Present Strength; Increase since the Transfer to the Metropolitan Board.*
2. *Representations in detail by Captain Shaw as to the want of an Increased Force; Reports to this effect from time to time.*
3. *Explanations on the part of the Metropolitan Board and the Fire Brigade Committee; great Extravagance involved in the larger Scheme proposed by Captain Shaw.*
4. *Modified Increase suggested on the part of the Board.*
5. *Increased Force proposed by Captain Harris.*
6. *Other Suggestions generally for increasing the Strength of the Brigade.*

1. *Present Strength; Increase since the Transfer to the Metropolitan Board:*

Great increase in the strength of the brigade since its transfer to the Board; total of fifty-three stations, of 114 engines, and of 398 men at the preseut time, including all ranks, *Captain Shaw* 110–112——Opinion that the present force under witness is very weak, *ib.* 127——Total of 129 men transferred with the old brigade to the Metropolitan Board; large force in addition kept by the parishes, *ib.* 316–329——Occurrenee of the great majority of fires between seven in the evening and midnight; total of 188 men available during those hours at the present time, *ib.* 421–426.

Examination to the effect that allowing 130 men for working the 106 fire escapes, there are eighty-four men less than were originally estimated for by witness, though the population and houses have since increased by about seventeen per cent., *Captain Shaw* 616–630. 640, 641.

Instances of very large fires at which a great many men have been employed; question

Report, 1876—*continued.*

STRENGTH OF THE BRIGADE—continued.

1. *Present Strength; Increase since the Transfer, &c.*—continued.

hereon as to there being staff available for coping with two large fires at the same time, without leaving the metropolis generally unprotected, *Captain Shaw* 645–661—— Circumstance of the officers working as well as the men, on account of the insufficiency of the latter, *ib.* 680–682 —— Very energetic discharge of their duties by the men, the insufficiency of numbers being, however, a great disadvantage, *ib.* 683–685. 709–712.

Instances at large fires of officers having to work with the hose, &c., through the limited supply of men, *Hamlyn* 1920–1928——Frequent scarcity of men at large fires, the men being dissatisfied with the overwork thrown upon them, *ib.* 1832–1836. 1912, 1913.

Circumstance of only one man being left at some stations in the D division in the event of the engine going to a fire, whilst some stations are closed altogether, *Port* 2033–2037 —— Under-manning of the engines generally at large fires, *ib.* 2130–2144.

Threefold increase in the plant and staff of the brigade since its transfer to the Metropolitan Board in 1866, *Freeman* 4321–4325——Belief that Captain Shaw has not represented to the Fire Brigade Committee that in the event of a great fire the rest of the metropolis would be unprotected, *Thompson* 5133, 5134. 5143, 5144——Doubt whether the present strength of the brigade is above or below what was recommended by Captain Shaw in 1865, *ib.* 5258–5270——Question considered as to the number of men available at night for coping with great fires, should they occur; better resources for meeting such contingencies but for the want of funds, *ib.* 5318–5331.

Possibility, doubtless, of two or three very large fires in London on the same night, in which case the staff would be very insufficient; witness, however, is not aware of deficiency of staff at any fire, *Lovell* 6398–6406 ——Opinion that the present brigade is very undermanned, *Harris* 7893–7896.

Table showing the number of fire engine stations, men, fire escapes, and fire escape stations on the 1st January in each year from 1866 to 1876; large increase, *App.* 639.

2. *Representations to the Metropolitan Board in detail by Captain Shaw as to the want of an Increased Force; Reports to this effect from time to time:*

Great importance of a multiplication of stations and engines, and of an increased number of men, so that the stations may be brought nearer to fires; report by witness in 1872 containing suggestions for an enlarged establishment, *Captain Shaw* 213–230 ——Total of 931 men, 330 fire engines, 200 fire escapes, and 169 fire stations, proposed by witness, *ib.* 226–229——Frequent reports made by witness to the Metropolitan Board with a view to an increase of stations and of men from time to time; these shall be submitted to the Committee, *ib.* 250–254.

Particulars as to the force originally estimated by witness for districts A, B, C, and D, respectively, and as to the existing establishment in each district; great deficiency in each case as compared with witness' estimate, *Captain Shaw* 371–420.

Witness delivers in to the Committee various reports made by him to the Fire Brigade Committee since 1866, asking for an increase of force, &c.; these do not include some official reports or letters addressed, from time to time, to different Chairmen of the Committee, *Captain Shaw* 492–503——Adoption of many of witness' recommendations, whilst some have been partially adopted and others not at all, *ib.* 493. 497, 498.

Opinion that it would be true economy to have a force of 931 men, as estimated for by witness in 1872, at a cost of about 120,000 *l.* a year; material reduction of serious fires thereby, *Captain Shaw* 995–1002.

Grounds for the calculation that with the present stations and engines about 200 more men are required to render the brigade so far efficient; particulars as to the proposed distribution of this increase, *Captain Shaw* 1003–1013——Estimate of 20,000 *l.* a year as the cost of an increased force of 200 men for wages; additional charge for lodgings and rent, *ib.* 1014–1018.

Further explanations in connection with the three schemes and detailed estimates submitted by witness to the Home Office; reference especially to the third estimate as having provided for 351 officers and men, *Captain Shaw* 1214–1232——Considerable capital outlay required in order to provide engines, stations, &c., for the larger scheme estimated by witness to cost 120,000 *l.* a year, *ib.* 1267–1273.

Statement as to witness having frequently recommended additions to the *personnel* of the brigade, as preferable to spending the money on increased buildings and stations; explanation as to his not having mentioned the latter point in his reports as the less pressing of the two requirements, *Captain Shaw* 1705–1718.

Suggestion by Captain Shaw, under date 1st May 1866, that fifteen more men be appointed, *App.* 602.

Recommendation

STRENGTH OF THE BRIGADE—continued.

2. *Representations to the Metropolitan Board, &c.*—continued.

Recommendation by Captain Shaw, under date 11th July 1866, that thirty additional men be appointed, *App.* 604.

Recommendation, under date 13th October 1866, that twenty-five vacancies, which had occurred since the Metropolitan Board undertook the charge of the fire brigade, be filled up, *App.* 604.

Report by Captain Shaw, dated 6th June 1868, recommending a material increase in the strength of the force, *App.* 610.

Further representations by Captain Shaw, under date 18th June, and 2nd and 28th July 1868, urging the appointment of additional men, the duties being excessive in proportion to the staff, *App.* 611–613.

Recommendation, under date 10th October 1868, that thirty-five men temporarily employed be permanently enrolled, *App.* 614.

Report, under date 14th October 1872, proposing that the brigade shall comprise 931 firemen, 330 fire engines, 200 fire escapes, and 169 fire-engine stations, *App.* 624.

Estimate, by Captain Shaw, under date 24th October 1872, of about 120,000 *l.* a year as the total cost of the enlarged brigade proposed by him, instead of 70,000 *l.*; conclusion that this outlay would be attended by a much more than corresponding saving in life and property, *App.* 624, 625.

3. *Explanations on the part of the Metropolitan Board and the Fire Brigade Committee; great Extravagance involved in the larger Scheme proposed by Captain Shaw:*

Examination explanatory in detail of the extent to which the Board have complied with the several reports of Captain Shaw since July 1866, submitting recommendations for an increase of force, *De la Hooke* 2953–2956. 3070 *et seq.* 3223——Prompt compliance with the recommendation by Captain Shaw in October 1860, for the appointment of thirty-five additional men, as a means of removing the complaints of the men as to overwork, *ib.* 2953–2956——Increase from 373 to 395 in the number of men between 1st January 1869 and 1st January 1876; addition of two floating stations and sixteen fire-escape stations during this period, *ib.* 2957–2964.

Reference to Gaptain Shaw's scheme of October 1872, as involving so large an expenditure that the Board did not seriously consider it, *De la Hooke* 3128–3131——Appointment of sixty additional men adverted to in connection with representations as to the excessive duty in the force up to October 1868, *ib.* 3239–3242.

Sundry reports from Captain Shaw delivered in with explanations thereon, upon the subject of an increase of staff and plant, *De la Hooke* 3289 *et seq.*——Compliance of the Board with Captain Shaw's report in May and October 1868, asking for additional men whereas in October 1872 he asked for an increase in the number of firemen to 931, *ib.* 3368–3377.

Doubt as to Captain Shaw having ever told the Fire Brigade Committee that if he had the money to dispose of he would do so by immediately increasing the brigade, *De la Hooke* 3526——Circumstance of the Board not having applied to Parliament for power to raise funds for carrying out the large extensions proposed by Captain Shaw, *ib.* 3531–3536.

Compliance with Captain Shaw's suggestions for an increase of staff and of stations, so far as the means of the Board have permitted, *Freeman* 3885, 3886. 3888–3890. 3910–3913——Great extravagance involved in a proposition by Captain Shaw for a force of 900 men, *ib.* 3891. 3913. 3920. 3939. 4102. 4186–4189——Doubt whether the saving by reduction of fires would pay for the increased cost of a very large increase in the number of stations and engines as well as of men, *ib.* 3920. 3922, 3923.

General efficiency of the present brigade as gradually strengthened from time to time, though Captain Shaw may not be satisfied till it has crept up to 900 men, *Freeman* 3937–3939——Dissent from Captain Shaw's estimate of the number of men required for the fire escapes; only one man remains with the escape through the night, *ib.* 4190–4196——Circumstance of Captain Shaw having offered to send twelve engines and 100 men to Paris upon the occasion of the great fire in 1871, *ib.* 4279–4281. 4450.

Dissent from a certain statement by Captain Shaw that more money should have been spent upon the staff and engines, and less upon new stations, *Freeman* 4326–4328——Due weight always attached by the Fire Brigade Committee to Captain Shaw's applications for an increase of force, though his proposal for a brigade of 900 men is considered a most extravagant scheme, *ib.* 4448–4451——Explanation that witness has not understood Captain Shaw as preferring an addition of 200 men, with increased utilisation of the police, to the project for a force of 900 men, *ib.* 4452, 4453.

Several instances of the Fire Brigade Committee having appointed additional men upon the representations of Captain Shaw, *Thompson* 5124–5126. 5132.

Report, 1876—*continued.*

Strength of the Brigade—continued.

4. *Modified Increase suggested on the part of the Board:*

Expediency of an increase of staff in view of the contingency of a very large fire, though witness considers so large an increase as 200 men is not required at present, *Freeman* 3915–3919——Examination with reference to the force required to cope with a great fire, or with two great fires at the same time; and the effect as regard the number of men left for the protection of the rest of the metropolis; approval of a reasonable increase of men in view of this and other considerations, *ib.* 4038–4059.

Data for the conclusion that an immediate addition of 200 men is more than is required, and that 100 would probably suffice, including the increase entailed by a new central station, *Freeman* 4180–4189——Contemplated addition of fifty men, or one for each station, if the limit as to rating be removed, *ib.* 4287–4289.

Contemplated addition of about twelve stations and twelve fire-escape stations, in which case there should be an addition of about 120 men, including one extra man for each existing station, *Freeman* 4332–4334. 4383–4393——Belief further expressed that for the present number of stations an increase of 200 men is far more than is required, and that an addition of one man to each station would admit of satisfactory facilities for rest and leave, *ib.* 4413–4417. 4419.

Opinion that including the largely increased force proposed for the new central station 100 additional men, or less than 100, would be sufficient, *Richardson* 4832–4837.

Conclusion that a further increase of staff is now desirable in order that the men may get more leave, though witness does not admit that the men have been actually overworked, *Thompson* 5128, 5129——Suggestion that the strength of the brigade be so far increased as to admit of each man having twenty-four hours off duty every fortnight, *ib.* 5204–5208. 5211——Want of some additional stations, so that on this score, as well as in order to give more leave to the men, there should be an increase of staff, *ib.* 5399–5405.

5. *Increased Force proposed by Captain Harris:*

Contemplated increase of the brigade so that it shall comprise 693 men and boys; great danger now incurred through the force not being able to cope with two or more very large fires simultaneously, *Harris* 7945–7955.

Return showing the stations proposed by Captain Harris, and the number of engines and of men to be maintained at each station, *App.* 692, 693——Total force of 693, including all ranks, according to the scheme of Captain Harris, *ib.*

6. *Other Suggestions generally for increasing the Strength of the Brigade:*

Expediency in the first instance of increasing the number of men rather than of stations, *Hamlyn* 1839–1842——Advantage of an increase of several men and one officer at all the head stations, *Port* 2197–2200——Expediency of the brigade being sufficiently strong to be independent of outside help at fires, *ib.* 2272–2274.

Want generally of an increased staff at fires, so as to be more independent of outside assistance, *Bull* 2407–2412——Satisfactory relief from excessive duty if there were 200 more men without any increase of station and fire escapes, *Morris* 2737–2742.

Opinion that if the existing stations and arrangements are to continue the brigade should be increased by 100 men; that is, by having one man for each fire escape over and above the present establishment, *Swanton* 7140-7144——Advantage of an increase of fire-brigade stations, this probably involving an increase of force and of charge, *Henderson* 7836, 7837.

See also *Central Station*, 3. *Cost. Engines. Fire Escapes. Floating Engines. Hours of Duty. Hydrants. Police. Rate. Recruits. Stations.*

Suburbs. Heavy work in the suburban and outlying districts though the fires are not numerous, *Captain Shaw* 1319, 1320——Considerable distance between some of the outlying stations in witness' division, only one or two men being sometimes available at each station, *Hamlyn* 1785–1790.——*See* also *Area.*

Sunday Duties. Hours of Duty, 3.

Superannuation:

1. *Non-adoption hitherto of a Superannuation Scheme; Explanation on the part of the Metropolitan Board.*
2. *Memorials from the Men on the Subject.*
3. *Scheme prepared by Mr. Thompson and submitted to the Men in February 1875; its Rejection.*
4. *Scheme prepared by a Sub-committee of the Works and General Purposes Committee, but not approved by the latter.*

5. *Views*

Report, 1876—*continued.*

SUPERANNUATION—continued.

5. *Views of Captain Shaw and of the Men in regard to the Scheme prepared by Mr. Richardson, and recently adopted by the Board; amended Conditions advocated by the Men.*
6. *Explanations in Detail on the part of the Board in support of the foregoing Scheme; Comment upon its Rejection by the Men.*
7. *Suspension of further action in the matter pending the present Inquiry.*
8. *Effect of a Superannuation Scheme upon the Question of Resignations.*
9. *Approval of a Scheme upon the Basis of that in force in the Police.*
10. *Analogy in the case of the Salvage Corps.*
11. *Question of a Right to Superannuation irrespective of Misconduct.*
12. *Number of Pensions hitherto granted.*
13. *Suggestions in Report by the Accountant of the Metropolitan Board.*
14. *Documentary Evidence in illustration of the working of different Schemes.*

1. *Non-adoption hitherto of a Superannuation Scheme; Explanation on the part of the Metropolitan Board:*

Explanation that there is no superannuation scheme yet in force, though gratuities and pensions are given in special cases, *Captain Shaw* 263–268——Understanding in the brigade at the time of the transfer that the question of superannuation was to be placed on a satisfactory footing, whereas no definite scheme has yet been settled, *ib.* 744–749.

Resolution adopted by the Board at the time of the transfer of the brigade in accordance with the conditions demanded by the men on the subject of superannuation and the men's contributions to the fund, *De la Hooke* 3004, 3005——Statement as to the staff of the fire brigade not coming under the Superannuation Act of 1866, and as to the Board having only recently prepared a scale of pensions under the powers of the Fire Brigade Act, *ib.* 3410–3418.

Considerable differences of opinion at the Metropolitan Board upon the question of a superannuation scheme, witness being one of those in favour of retiring pensions, *Freeman* 3991, 3992——Anxiety of the Board to give prompt effect to a superannuation scheme; prospect of a speedy settlement, *ib.* 4302–4304.

Action of the Board with a view to the adoption of a scheme previously to, and irrespective of, the appointment of the present Select Committee; delay through the illness of two members of the Board, *Richardson* 4619, 4620.

Further explanation as to the delay before a scheme was finally adopted by the Board, witness repeating the denial that the appointment of the present Committee had anything to do with the promotion of the scheme, *Richardson* 4866–4871.

Opinion of many members of the Fire Brigade Committee in favour of a superannuation scheme, this question resting, however, with the Works and General Purposes Committee, *Thompson* 5149, 5150.

2. *Memorials from the Men on the Subject:*

Memorials from the men to the Board in June 1873, and September 1874, relative to the superannuation question; due consideration given to the subject by the Board, a scheme having been finally approved in March 1879, *De la Hooke* 3041–3044. 3055–3064——Statement that neither in November 1874, nor June 1875, did Captain Shaw submit any further memorial from the men, *ib.* 3045, 3046. 3052–3054——Conclusion as to the petition from the men relative to a superannuation scheme not having been officially submitted to the Fire Brigade Committee on 9th November 1875, *ib.* 3584–3590.

Reference to the Works and General Purposes Committee of a memorial from the officers and men of the fire brigade in March 1874, upon the question of superannuation; subsequent resolution of the Board in July 1874, that a scheme should be established, based upon contributions from the men, *Richardson* 4556, 4557.

Memorial of the officers and men, dated 28th February 1874, praying for the adoption of a scale of pensions, *App.* 641, 642.

3. *Scheme prepared by Mr. Thompson and submitted to the Men in February 1875; its Rejection.*

Scheme of superannuation submitted by the Board to the men in February 1875, but rejected by them on the ground that they were to be called upon to provide all the fund, *Captain Shaw* 799–808.

Rejection by the men of a scheme proposed by an individual member of the Board in January 1875, whereby the pensions were to be paid entirely out of their own contributions, *De la Hooke* 3047–3051——Explanations on the subject of Mr. Thompson's scheme, witness submitting that it was not adopted by the Works and General Purposes Committee; reference hereon to the accountant's report upon this scheme, *ib.* 3591–3616

SUPERRNNUATION—continued.

3. *Scheme prepared by Mr. Thompson, &c.*—continued.

Interval between July 1874, and January 1875, before the Works and General Purposes Committee took action; a scheme prepared by Mr. Thompson, the Chairman of the Committee, having been completed for consideration, *Richardson* 4458-4461——Report subsequently laid before the Committee by Captain Shaw, stating the objections of the men to Mr. Thompson's scheme; summary of the objections urged in this report, *ib.* 4462. 4465, 4466——Basis of the scheme that the men should contribute 2½ per cent. of their pay, and that after thirty years' service they should retire with a pension equal to half their pay; several other conditions of the scheme, *ib.* 4463, 4464.

Entire inaccuracy of the assumption on the part of the men and Captain Shaw that the scheme involved a system of superannuation for a future generation at the expense of the men now serving, *Richardson* 4466——Report upon the scheme by the accountant of the Board, but not favourably, *ib.* 4467, 4468——Doubt as to Mr. Thompson's scheme having been based solely upon contributions by the men, *ib.* 4863-4865.

Approval of a somewhat smaller rate of pay to the men together with a deferred payment in the shape of a superannuation fund, as a means of retaining men in the service, *Thompson* 5145-5148——Reasons assigned for witness having based his superannuation scheme entirely upon the men's contributions; prompt withdrawal of the scheme upon the objections raised by the men, *ib.* 5336, 5337.

Inadequacy of any superannuation scheme based entirely on the men's contributions, *Harris* 7959.

4. *Scheme prepared by a Sub-committee of the Works and General Purposes Committee, but not approved by the latter:*

Conditions adopted by the Sub-committee of the Works and General Purposes Committee in March 1875, as the basis of a new scheme; subsequent preparation of a scheme embodying these conditions, which was finally considered by the full Committee in November 1875, *Richardson* 4469-4471——Rejection of the foregoing scheme by the Works and General Purposes Committee, chiefly on the ground that it provided for the officers and men paying back subscriptions from the time of entering the service, *ib.* 4472-4476.

5. *Views of Captain Shaw and of the Men in regard to the Scheme prepared by Mr. Richardson, and recently adopted by the Board; amended Conditions advocated by the Men:*

Further scheme recently submitted by the Board, but also rejected by the men; reasons assigned by the men for such rejection, and amended conditions proposed by them, *Captain Shaw* 809-829——Belief as to the Board having engaged to contribute 500 *l.* a year to the proposed fund, *ib.* 819——Opinion that the maximum pension should be reached after fifty years' service, instead of thirty-five years as proposed by the Board, *ib.* 820-224. 828——Strong objection by the men to the proposal that a man must have attained the age of sixty before he can claim his discharge; concurrence of witness in this objection, *ib.* 824-827.

Explanation that witness has not taken any active part in the superannuation movement but has recently had an interview with the men on the subject, and is prepared to state their objections to the several clauses of the scheme proposed to be put in immediate operation, *Captain Shaw* 829-831. 835. 837——Paper containing the scheme of superannuation proposed to come into operation on 1st May 1876, *ib.* 837.

Further statement as to the objection by the men to the conditions in the scheme in regard to thirty-five years of service and sixty years of age; expediency of these conditions being amended, *Captain Shaw* 837-839——Concurrence in the claim of the men to their allowance as well as their pay being calculated in their pensions, *ib.* 839-841——Amount of deduction proposed by the scheme from the pay of the various ranks; reduced amonnts suggested by the men, *ib.* 842, 643.

Statement made to witness on the part of the men that a deduction of 2½ per cent. all round would be satisfactory to them; witness considers this is more than they can afford, *Captain Shaw* 843-847——Circumstance of the Board not having invited the views of the men on the scheme now under consideration, *ib.* 848——Explanation in connection with the proposal by the men that service for the purposes of the scheme shall date from original appointment before transfer to the Board, *ib.* 849-156.

Amount of pension or gratuity proposed by the scheme in reference to length of service; alterations suggested by the men on this point, *Captain Shaw* 857-859.

Table showing the proportion of his pay which a number of the brigade would, under the scheme, receive as pension if incapacitated, after varions terms of service, *p.* 57.

Explanation that the men are of opinion that for incapacity, the maximum pension should be attained at twenty-five years, and that without incapacity it should be attained at thirty years; that is, instead of at thirty and thirty-five years, respectively, as proposed

Report, 1876—*continued.*

SUPERANNUATION—continued.

5. *Views of Captain Shaw and of the Men, &c.*—continued.

posed by the Board, *Captain Shaw* 880–892——Negotiations of the Board with the men upon the superannuation question without witness' advice having been asked, *ib.* 1360.

Grounds for the proposal that when a man becomes entitled by length of service to a full pension, he should no longer be called upon to contribute while he remains in the brigade, *Captain Shaw* 1363–1367——Objection to a limit of age for compulsory retirement, though there should be a limit of service entitling to a pension, *ib.* 1402, 1403.

Further suggestions as to the constitution and administration of the fund; objection to its being composed entirely of the men's contributions, and being managed by them, their pay being made sufficiently liberal for the purpose, *Captain Shaw* 1487–1495.

Further statement as to the disagreement between the men and the Board upon the question of length of service before superannuations, the men objecting also to a service up to sixty years before they can claim a pension, *Captain Shaw* 1504–1508.

Expediency of men having a right to retire on a pension after thirty years' service, but only on medical certificate after twenty-five years, *Hamlyn* 1809–1814. 1937–1939. 1961–1964——Impression that the men would not object to a deduction of 2½ per cent. from their pay, if satisfied on other points, *ib.* 1929–1944; *Kelly* 2535.

Willingness of the officers to contribute 2½ per cent. of their pay to a superannuation fund, *Port* 2105——Opinion that a man pronounced unfit for service after twenty-five years should be entitled to retire with his maximum pension, *ib.* 2224.

6. *Explanations in Detail on the part of the Board in support of the foregoing Scheme; Comment upon its Rejection by the Men*:

Desire expressed by the men in April 1876, that the scheme of superannuation promoted by them in February 1874 should be carried out; rejection at the same time of the scheme proposed by the Board in March last, *De la Hooke* 3055–3068 —— Dissent of the men from the proposal of the Board that superannuation should not be claimed till the age of sixty, *ib.* 3065——Difference betweeen the men and the Board as to the deduction to be made from the pay; the former have not stated that they would agree to a contribution of 2½ per cent. *ib.* 3065–3067——Circumstance of the servants of the Board, other than the Fire Brigade, not contributing anything towards their superannuation, *ib.* 3642–3644.

Difficulty raised by the men as to the limit of service being fixed at the age of sixty, *Freeman* 4003. 4009. 4210——Hasty and inconsiderate rejection of the Board's scheme by the men; willingness of the former to have conceded certain points, *ib* 4006–4008.

Further statement as to the men having hastily rejected the Board's superannuation scheme without really understanding it; influence used in order to induce them to reject it, *Freeman* 4105-4116.

Delay subsequently to November 1875, before any further scheme was submitted; illness of two members of the Board adverted to hereon, *Richardson* 4477——Eventual initation of a new scheme by witness, which was submitted to the Works and General Purposes Committee on 27th March 1876, was approved by the Committee without alteration, and was finally adopted by the Board on 31st March, with one or two important alterations, *ib.* 4477–4481——Amendment made in the scheme to the effect that for a service of less than ten years a man, obliged to leave through infirmity, should be entitled to a gratuity equivalent to one month's pay for each completed year of service, *ib.* 4478.

Circumstance of Captain Shaw having been present at the Committee during the discussion of witness' scheme without offering any suggestion for its amendment, his only suggestion being that it should be first referred to the men, *Richardson* 4479 —— Statement in justification of the refusal by the Works Committee and by the Board to submit the scheme in question for the consideration of the men; very liberal character of the scheme adverted to hereon, *ib.* 4479–4491——Much greater return to be given to the men under the scheme than was represented by the savings fund, *ib.* 4484. 4487. 4499.

Unauthorised course pursued by Captain Shaw in obtaining a copy of the scheme and submitting it to the men, *Richardson* 4485——Misconception upon which the men rejected the scheme of the Board, it being much more liberal than the scheme proposed by themselves in February 1874, *ib.* 4485, 4486——Importance of very careful consideration before embarking upon a scheme involving contributions by the men, as it must be adhered to however costly, *ib.* 4499.

Semi-official representations made to the men as to their inconsiderate haste in rejecting the Board's scheme; refusal on their part to withdraw their rejection, *Richardson* 4510

 ——Statement

Report, 1876—*continued.*

SUPERANNUATION—continued.

6. *Explanation in Detail on the part of the Board, &c.*—continued.

——Statement as to the necessity of the provision in Clause 9 of the scheme as to men being entitled to a pension after a certain service at sixty years of age; that is, in addition to pensions on medical certificate of incapacity, *Richardson*, 4511.

Explanation in reply to the claim by the men to receive pensions in proportion to their pay and allowances combined, whilst their contributions should be based only upon their pay, *Richardson* 4511–4517——Calculation of the Board's scheme upon a 3 per cent. contribution, whilst the men propose 2½ per cent., *ib.* 4517. 4538, 4539.

Comparison between the amount of pensions under the Board's scheme, under the men's scheme, and under the police scheme, witness submitting that the Board's scheme is the most liberal, *Richardson* 4517–4523——The difference between 2½ per cent. and 3 per cent. is about 130 *l.* a year upon the whole brigade, or about 2 *d.* per week per man, *ib.* 4517. 4537.

Explanation of the separate mode in which it is proposed to deal with men transferred with the old brigade and with men who have since joined, as regards the sum to be contributed in consideration of the pension to be awarded, *Richardson* 4523–4528. 4537——Illustration of the advantage of the Board's scheme in the case of men leaving after ten years in the brigade, who have been contributing during that period to the savings' fund, *ib.* 4531, 4532——Varying advantage to different men according to length of service, *ib.* 4533.

Obligation upon those joining in future to leave their contributions behind them if they leave the service, *Richardson* 4536. 4568——Comparison between the working of the Board's scheme of 3 per cent. deduction and the men's scheme of 2½ per cent. deduction; much larger relative pension in the former case, *ib.* 4537–4540——Considerable number of men now approaching the age for pensions, whilst there are sixty-seven men over fifteen years' service, *ib.* 4556, 4557.

Explanation that the superannuation scheme would, in all probability, have included those who had served as parish engine keepers, had it been known that any were still in the brigade, *Richardson* 4569. 4574——Active agitation against the scheme by a man in the brigade who was transferred from one of the parishes; probable acceptance of the scheme but for the influence thus brought to bear upon the men, *ib.* 4569–4573.

Tabular statement submitted, and explanations thereon, showing the liberal annuities to which the first and last man in each grade would be entitled under the scheme as compared with the amounts contributed by them, *Richardson* 4588–4592——Concurrence between the foregoing table and another table showing the increasing annuity which each foreman would receive calculated as a per-centage upon his pay; maximum per-centage of 66 *l.* 13 *s.* 4 *d.*, *ib.* 4593–4598.

Conclusion as to the very liberal character of the Board's scheme, and as to the men having acted under misconception in refusing it, *Richardson* 4617, 4618——Exception taken to Captain Shaw's comparison between the relative ranks in the brigade and in the police, as affecting the pension scheme, *ib.* 4649, 4650.

Examination in further support of the view that the men must have misjudged witness' superannuation scheme very hastily and erroneously, if they supposed that it required them to make back payments as basis of the fund, *Richardson* 4843–4855——Large boon offered to the men by the scheme, so that it was not deemed necessary to consult them before hand through Captain Shaw, *ib.* 4857–4862——Presence of Captain Shaw at every meeting when the scheme was under discussion, without ever offering any suggestion for its amendment, *ib.* 4872–4874.

7. *Suspension of further action in the matter pending the present Inquiry:*

Explanation that further action has been suspended by the Board in view of the inquiry by the present Committee, *De la Hooke* 3069——Course pursued subsequently to the rejection of the Board's scheme by the men; resolution eventually adopted to postpone further action in the matter pending the Report of the present Select Committee, *Richardson* 4492–4497.

8. *Effect of a Superannuation Scheme upon the Question of Resignations:*

Special importance attached to the establishment of a superannuation fund as a means of retaining the men in the force, *Captain Shaw* 245–247. 308–311——Dissatisfaction of the men through the non-provision of a superannuation fund, *ib.* 716, 717. 791——Way in which a superannuation scheme would be more effective than increased pay in retaining men in the force, *ib.* 1735, 1736.

Concurrence in the view as to the great importance of a superannuation scheme as a means of retaining experienced men in the service, *Hamlyn* 1798–1808. 1819–1821. 1929–1936. 1972; *Duck* 2287–2293. 2337–2341——Doubt as to efficient men retiring on a pension after thirty years' service and getting other employment, *Hamlyn* 1937–1939. 1950–1954. 1961–1964.

Report, 1876—*continued.*

SUPERANNUATION—continued.

8. *Effect of a Superannuation Scheme upon the Question, &c.*—continued.

Importance of a superannuation scheme rather than an increase of wages as a means of retaining men in the service, *Port* 1978-1986. 2240——Probability of men remaining in the service longer than thirty years, if they have entered young and are still efficient, *ib.* 1982-1985——Satisfaction to be given by a superannuation scheme, even if promotion were more slow in consequence, *ib.* 2249-2251.

Entire concurrence in the evidence of Captain Shaw and Mr. Hamlyn on the score of superannuation and its importance in order to induce men to remain in the brigade, *Bull* 2394-2399; *Fitzmaurice* 2799-2801——Concurrence in the evidence of Captain Shaw and other witnesses in favour of superannuation after twenty-five and after thirty years; effect thereof in inducing men to remain in the service, *Kelly* 2464-2471.

Great importance of a superannuation scheme in order to make the men more contented with the service, and to prevent their leaving the brigade for other employment, *Morris* 2610-2613. 2670-2681. 2714-2717——Confirmation of the evidence of Captain Shaw and other witnesses as to the satisfaction to be given in the brigade by the superannuation scheme advocated by them, *Wittwer* 2769-2772.

Evidence in denial of the statement of Captain Shaw as to the prejudicial effect of the want of a superannuation scheme, in causing large numbers of men to leave the brigade, *Freeman* 3993-4002. 4005. 4008. 4206-4209. 4223. 4329-4331; *Richardson* 4487-4489. 4555. 4558-4568. 4598-4609. 4627-4629.

Data for the calculation that if there were resignations, as the result of a superannuation scheme, about half of those entering would attain the age of sixty in the brigade, and would be entitled to a maximum pension; entire failure of the fund if there were not numerous resignations, *Richardson* 4551-4555. 4561-4568.

9. *Approval of a Scheme upon the Basis of that in force in the Police:*

Opinion that the scheme in the metropolitan police is a very fair one; approval of a scheme for the fire brigade on the same basis, *Freeman* 4003-4005. 4010. 4117. 4305——Expediency of the superannuation being based upon the pay, without reference to the pensions in the police, *ib.* 4651, 4652——Approval generally of the police scheme as the basis of a scheme for the fire brigade, *Thompson* 5338-5341.

Probability of service in the police being less hazardous to life than service in the brigade, *Henderson* 7794, 7795——Expediency of the brigade men having the same advantages as the police on the score of superannuation, *Harris* 7956-7958.

10. *Analogy in the case of the Salvage Corps:*

Expediency of a superannuation scheme for the brigade, as there is for the salvage corps; very trying nature of the duties, *Swanton* 7148-7151.

11. *Question of a Right to Superannuation irrespective of Misconduct:*

Explanation that witness fully agrees with the men in their view that after twenty-five years' service their pension should not be entirely forfeited in the event of misconduct, *Captain Shaw* 871-875. 893-914——Witness goes beyond the men's views, and submits that at the end of twenty years they should get something for their service, in spite of misconduct; distinction, however, to be drawn between misconduct and gross misconduct, *ib.* 893-914.

Opinion that after a certain length of service, such as twenty-five years, there should be a claim to a pension irrespectively of misconduct, unless it were gross misconduct, *Morris* 2670-2681.

Evidence adverse to the proposition for a system of inalienable pensions, irrespective of misconduct, *Richardson* 4544-4551. 4614-4616. 4876-4881. 4911-4930. 4980-4982.

12. *Number of Pensions hitherto granted:*

Reference to a return containing information as to the pensions, &c., up to 1874; facility of obtaining later and fuller information upon the subject from the books of the Metropolitan Board, *Captain Shaw* 268-290——Superannuation of four men since the transfer of the brigade to the Metropolitan Board, *ib.* 750, 751. 777, 778.

13. *Suggestions in Report by the Accountant of the Metropolitan Board:*

Report by the accountant of the Metropolitan Board, dated 2nd March 1875, containing explanations and suggestions in detail upon the subject of a superannuation fund for the fire brigade, *App.* 657-660.

14. *Documentary Evidence in Illustration of the Working of different Schemes:*

Table showing the proportion of pay which a member of the brigade would receive as pension if incapacitated after various terms of service, under different schemes which have been proposed, *App.* 661.

Tabular statement of the length of service of men leaving the brigade in each of the years 1866-75, *App.* 661.

Report, 1876—*continued.*

SUPERANNUATION—continued.

14. *Documentary Evidence in Illustration of the Working, &c.*—continued.

Statement showing the amount contributed by the first and last man in each class, and the annuities they would be entitled to under the Board's superannuation scheme, if it had been accepted, *App.* 662.

See also *Bridges, Mr. Discontent. Flynn, ——. Gratuities and Pensions. Manchester, 7. Promotion. Radford, Charles. Recruits. Savings Fund.*

Superintendents. Claim on the part of the superintendents (which witness supports) to an increase of pay; expediency of assimilation to the pay of superintendents of police, *Captain Shaw* 957–963. 989——The superintendents now receive 200*l.* a year, but have not to pay for rent, coals, or gas; allowance to be made on this score, *ib.* 959–963 ——Want of two more superintendents, *ib.* 1187, 1188——Leave for about fourteen days given to the superintendents, *ib.* 1189.

Smaller remuneration of superintendents in the fire brigade than in the police; suggested assimilation, *Hamlyn* 1815–1821. 1940, 1941.

An application from the superintendents as now under consideration by the Metropolitan Board, *De la Hooke* 3390.

See also *Bridges, Mr.*

Supernumeraries. Explanation in connection with the refusal of the Metropolitan Board to comply with suggestions by Captain Shaw, in February 1869, for the continued employment of supernumeraries, *De la Hooke* 3297–3299. 3525——Very exceptional employment of supernumeraries at the present time, *ib.* 3446.

Report of Captain Shaw, dated 13th February 1869, relative to the employment of supernumararies, together with Table showing the number of men temporarily employed as supernumeraries in place of men sick and suspended, from 1st January to 13th February 1868, *App.* 651——Action taken by the Metropolitan Board in April 1869, upon the foregoing question, *ib.* 652.

Supervision. Report by Captain Shaw, under date 6th February 1868, as to the expediency of an increased supervision of the men on duty, both in the stations and with the fire escapes, *App.* 648.

Swanton, William. (Analysis of his Evidence.)—Experience of witness as superintendent of the salvage corps in London since its formation in 1866; he was previously in charge of the western district of the fire brigade, 6957-6959——Employment of the salvage corps by the insurance companies, in order to lessen the damage to insured property when fires occur; assistance rendered by the corps to the fire brigade, 6960–6963.

Opinion that the number of engine stations in London should be doubled; that is, by the addition of small or sub-stations, 6964–6970——Importance of numerous small stations at which hose and other apparatus should be kept to be used upon the first outbreak of a fire, 6970. 6982–6986——Satisfactory supply of water and sufficient pressure for working a system of hydrants and hose; over about two-thirds of London the hydrants could be placed directly on the mains, 6971–6981 ——Great waste of water at fires under the present system, 6979. 6981——Great advantage by having apparatus at many police stations, and by the police applying the same upon the first outbreak of a fire before the engines arrive, 6985–6999.

Suggestions as to the extent to which the police might be utilised in the prevention of fires, the fire brigade being at the same time a separate branch of the police, 6987–6996 ——Economy of power and of outlay, by distributing the 115 engines, now maintained at fifty-two stations, over an increased number of stations, and by using police stations for this purpose, 6995–7001. 7013–7016——Circumstance of there having been ninety-eight stations in useful operation when the brigade was transferred to the Metropolitan Board; valuable services rendered by the parish engines at many of these stations, as being nearer than the present stations to the scene of the fires, 7000–7012.

Advantage if each fire escape carried with it one or two length of hose for application to hydrants, 7017, 7018——Witness repeats that hydrants may be generally applied so as to work effectually with the present pressure; increased pressure obtainable by shutting off the domestic supply during the continuance of any fire, 7019–7032. 7046–7050—— Waste of half the water when plugs are started for the service of the engines, 7021–7023. 7026——Estimate of from 3*l.* to 4*l.* as the cost per hydrant, plus the cost of breaking up the pavement, 7033——Advantage of flaxen hose at the police stations, as being much more easily handled than leather hose, whilst the latter is more durable, 7034–7038.

Result of an inquiry by witness, that four-fifths of the property in London attacked by fire is not insured, 7039, 7040. 7230, 7231——Grounds for the suggestion that adjoining water companies should be required to unite their mains for public purposes, 7041–7044 ——Doubt as to the advantage of the companies being amalgamated in reference to fires, as they now do their best for the purpose of fire suppression, 7045, 7048.

Large increase of pressure given by the companies in the last ten years, 7046—— Gradual way in which hydrants should be brought into operation; that is, with reference to the local pressure, 7047–7050——Useless expenditure in building reservoirs, and laying

Report, 1876—*continued.*

Swanton, William. (Analyis of his Evidence)—*continued.*

laying mains expressly for fire purposes, the present mains supplying all that is necessary, 7051–7053.

Statement in confirmation of Mr. Lovell's evidence as to the undue delay before the steam floats got to work upon the fire at the King and Queen Granary, Rotherhithe, in December 1871; 7054–7065. 7069——Difficulty in turning large floats in the tide-way, and in bringing them close to the land, 7063. 7065–7069. 7073——Advocacy of a supply of small steam floats, as urged upon the Metropolitan Board by the insurance companies; estimate of 2,000*l.* as the cost of each float, including fittings, and not drawing more than fourteen or sixteen inches of water, 7065–7072——Comment upon the purchase of four large floats by the Board, 7070.

Complaint as to the Metropolitan Board having removed stations formerly established by the companies near large accumulations of property, and as to fires having since occurred which have not been so promptly dealt with through the stations having been removed, 7074 *et seq.*——Exception taken to the removal of the station from Wellclose-square to Commercial-road, 7079–7082——Complaint also relative to the removal of the former stations at Well-street, Oxford-street, and at Crown-street, Soho; subsequent occurrence of sixteen fires in this district, which would have resulted in but slight damages if the stations had not been removed, 7082–7095. 7299–7308.

Further illustration of the increase of destructive fires in case of the removal of the Farringdon-street Station, 7096–7105——Probability of the new stations formed by the Metropolitan Board having prevented some destructive fires in their immediate locality; instance, in the case of the fire at Watney's brewery, the station at Victoria having proved very useful, 7106–7108. 7293–7299——Diminished losses which the companies would have had to meet if the former stations in crowded neighbourhoods had been retained, 7109–7111——Rapid arrival of the engines at the Pantechnicon fire, witness attributing no blame in connection with this fire, 7112–7127.

Further statement that by placing some of the surplus engines at police stations, and by utilising the police for fire extinction purposes, a great many fires would be stopped, without any increase of expense, 7128–7139. 7174–7176——Explanation that witness proposes that the police should go only to those fires close to their stations, and that on the arrival of the brigade men the duties of the police, as firemen, should cease, 7132, 7133. 7135. 7163–7165. 7173–7175——Facility of taking manual engines from police stations to adjacent fires, 7135–7139. 7166–7171.

Opinion that if the existing stations and arrangements are to continue, the brigade should be increased by 100 men; that is, by having one man for each fire escape over and above the present establishment, 7140–7144——Doubt as to the brigade men being overworked; hours of work of witness' men adverted to hereon, 7145–7174——Expediency of a superannuation scheme for the brigade, as there is for the salvage corps; very trying nature of the duties, 7148–7151.

Advantage if some fire escapes were on duty during the day, 7152, 7153——Facility in obtaining men for the salvage corps, 7154, 7155——Total of sixty-four men now in the corps, there being four stations in communication with each other, 7154–7162——Several fire-brigade stations with three engines, whilst in Watling-street there are five, 7172——Expectation that by properly utilising the services of the police at the right moment, there would frequently be very little for the brigade to do, 7174, 7175.

Sufficient money now spent upon the brigade to provide all that is required, 7177——Ample supply of water if it could only be properly used, 7178——Anxiety evinced by the companies to improve the supply for fires, witness seeing no advantage in an amalgamation of the eight companies, though there might be junctions between their mains at certain points, 7179–7182——Exceptional instances, as at Rotherhithe and Bermondsey, of the pressure being altogether inadequate for the purposes of the brigade, 7182–7186.

Suggestion that there be eight steam floats equally distributed between Westminster Bridge and Woolwich, and that they be of a smaller and more manageable kind than those now in use, 7187–7193——Sufficiency of three men for each float, 7190——Promptitude with which the proposed results could arrive at fires, whilst at present there is much delay, 7191–7193.

Strong objection to a removal of the central station from Watling-street to the south side of the river; sufficient facilities of egress from the station for the engines, 7194–7200——Opinion that two engines in Watling-street, with six or eight men, would suffice; other localities in the neighbourhood very well suited for new stations, 7201–7206——Very few fires hitherto in the immediate neighbourhood of the stations removed from Farringdon-street and other places, 7207–7209.

Requirement as to the men of the salvage corps living at or near the stations of the corps, 7210, 7211——Reasons for preferring sailors as fire-brigade men, especially those who have been in the Royal Navy, 7212–7214——Continuous service of witness for twenty-eight years as a fireman, he having commenced in the lowest grade of the insurance companies' brigade, 7214–7219.

Report, 1876—*continued.*

Swanton, William. (Analysis of his Evidence)—*continued.*

Average of about 6,000 *l.* a year as the cost of the salvage corps, the expense being now defrayed entirely by the companies, though the services of the corps are exclusively given to the protection of uninsured property, 7220–7232 —— Preference further expressed for an increased number of stations with similar appliances, rather than for a concentration of stations, and of plant, 7233, 7234 —— Conclusion that the fire bridage should be a branch of the police, 7235, 7236.

Consideration of the effects of the friction in a given length of hose in reducing the pressure, 7237–7247——Good pressure obtainable where there are twenty-inch mains, without turning off the domestic supply; several miles of such mains in London, 7249–7252——Dissent from a certain statement by Mr. Lovell as to a continuous supply being calculated to reduce the pressure in the mains much below its present point, 7253–7256 ——Very large cost represented by the water wasted at fires, 7257, 7258.

Modified pressure to be obtained by coupling a main having seventy feet of pressure with one having forty feet, 7259–7261. 7342——Cases of emergency in which the mains of different companies should be connected, 7260. 7341. 7353——Exceptions taken to certain experiments of Sir Joseph Bazalgette tending to show the general insufficiency of the pressure for the efficient working of a system of hydrants, 7262–7269——Explanation that witness contemplates the continued attendance of engines at fires, although hydrants should be largely provided, 7270, 7271. 7330, 7331.

Further evidence as to the delay before the floats got to work upon the Rotherhithe fire in December 1871, witness submitting that the officer in charge of one of the floats reported the time incorrectly, 7271–7281——Great advantage by having floats drawing only sixteen inches of water; efficient engines to be carried by such vessels, 7282–7292 —— Advantage of the old stations at Farringdon-street, and other points, as having been well known to the public, so that the latter speedily conveyed news of fires, 7306–7308.

Expediency of providing four stations, with one engine and four or five men at each, rather than of spending the money available upon one large station; sufficiency of 10,000 *l.* in the former case, 7309–7314——Further statement as to the advantage of manual engines which might be drawn by the police as assistants of the brigade, 7315–7318——Grounds for objecting to the removal of the station from Wellclose-square to the Commercial-road; that is, by reason of the proximity of the former to the docks, 7319–7329.

Sufficiency of the pressure further considered in connection with the application of hydrants; advantage of the latter chiefly where the property is valuable, and where the mains are large, 7332–7351——Avoidance of waste, and increase of pressure thereby, by the use of hydrants instead of plugs, 7335–7337——Better pressure given by the companies than is required of them under their Acts, 7338–7340——Great variation of pressure at different hours of the day, and according to the size of the mains, 7343–7351.

Four important points upon which the Metropolitan Board declined to adopt improvements urged by the insurance companies, 7352, 7353——Complaint further made in regard to the removal of stations from the vicinity of large masses of valuable and insured property, 7354–7358——Tendency to reduced insurance of property where there is a station in close proximity, 7359.

T.

Taylor, John. Reference to the case of John Taylor killed by falling from a fire escape; application for compensation made by his father, but refused on the grouud that he had not made it clear that he was at all dependent upon his son, *De la Hooke* 3634–3640.

Evidence in detail with further reference to the case of Taylor, who died from injuries received through falling from a fire escape, which broke while being tested; explanation more especially as to his parents having been refused any compensation, *De la Hooke* 3693–3701.

Telegraphic Communication. Connection of all the fire-brigade stations by telegraph, *Captain Shaw* 115——Telegraphic communication between stations in the D division; facility thereby in taking prompt action when fires occur, *Hamlyn* 1775–1780, 1837, 1838 ——Telegraphic communication between all the fire-engine stations, but not between the fire-escape stations, *De la Hooke* 3838–3840.

Advantage if the wives of men in charge of small stations were taught the use of the telegraph, *Freeman* 4317–4320; *Richardson* 4987——Increased charge for telegraphy according to the number of stations, *Gunn* 5475, 5476.

See also *Police*, 6.

Temple, The. Provision of thirty-six hydrants by the Temple authorities over an area of about ten acres, *Bramwell* 5866——Considerable expense incurred for a new main in connection with the hydrants in the Temple, *ib.* 5875, 5876——Satisfactory result of experiments in order to test the efficiency of the hydrants, *ib.* 5877–5880. 5886, 5887.

Further

Report, 1876—*continued.*

Temple, The—continued.

Further explanation in connection with the large pipe laid down in the Temple in connection with the hydrant system, *Bramwell* 5955, 5956——Cost of about 1,700 *l.* incurred in placing new mains in the Temple, and in fitting the internal hydrants, *ib.* 5987-5992——Satisfactory height to which water was thrown by the hydrants, *ib.* 5993-5996.

Exceptional conditions in the case of the Temple so that hydrants have been fixed with good effect, a special main having been laid down in connection with the hydrants, *Easton* 6012, 6013. 6017, 6018——Very satisfactory results shown by some hydrant experiments at the Temple, carried out by the Temple surveyor, *G. Shaw* 6193-6196. 6203, 6204.

Thames Conservancy and Thames Police. Valuable assistance rendered by the Thames Conservancy and the Thames police at river side fires, *Captain Shaw* 1168, 1169.

Theatres and Music Halls. Importance of some better protection of places of amusement, such as theatres and music halls; on the Continent such places are usually in charge of the fire brigade, *Captain Shaw* 1719-1734——Limited extent to which trained firemen are employed in theatres and other places of amusement, *Hamlyn* 1965-1971.

Thompson, Edward John. (Analysis of his Evidence.)—Experience of witness since July 1874 as Chairman of the Fire Brigade Committee of the Metropolitan Board, 5121-5123——Several instances of the Committee having appointed additional men upon the representations of Captain Shaw, 5124-5126. 5132——Opinion that a further increase of staff is now desirable in order that the men may get more leave, though witness does not admit that the men have been actually overworked, 5128, 5129——Statement as to Captain Shaw not having represented to the Committee that the men were overworked, or were, in individual cases, necessarily employed for a great number of consecutive hours, 5130-5132. 5135. 5137.

Belief that Captain Shaw has not represented to the Fire Brigade Committee that in the event of a great fire the rest of the metropolis would be unprotected, 5133, 5134. 5143, 5144——Explanation as to the Committee, or the Board, not having applied for power to increase the halfpenny rate; opinion of many members of the Board that London is sufficiently protected by the present brigade, 5136-5142——Approval of a somewhat smaller rate of pay to the men, together with a deferred payment in the shape of a superannuation fund, as a means of retaining men in the service, 5145-5148——Opinion of many members of the Fire Brigade Committee in favour of a superannuation scheme, this question resting, however, with the Works and General Purposes Committee, 5149, 5150.

Increase of stations by the Fire Brigade Committee, so far as their means permitted, 5151——Value of an increased number of stations so that fires may be promptly reached, and be checked before they become serious, 5152-5157——Advantage if the police could be utilised in promptly applying hose, 5158——Successful system at Liverpool, the firemen and police being one body, *ib.*

Evidence to the effect that it is not advisable to incur the expense involved in putting down hydrants throughout the metropolis, the pressure in the pipes being insufficient, and it not being feasible to dispense with engines, 5159-5177——Illustration in the case of the recent fire at Brooks' Wharf of the necessity of engines in addition to hydrants, 5159——Admission as to hydrants being a valuable security, where the pressure is sufficient; result of their application in the Kent company's district, 5160-5166. 5174-5176——Probable cost of a million sterling in laying down hydrants throughout London, 5167-5173.

Explanation that the question of hydrants as involving a large capital outlay is dealt with by the Works and General Purposes Committee, and not by the Fire Brigade Committee, 5177, 5178——Reference to the Fire Brigade Committee of the question of additional stations, the Committee reporting to the Board, and their recommendations being usually carried out, 5178-5192.

Recent visit of witness to some large stations, partly suburban, the absolute work at which was very light, 5193-5196. 5219——Duty of Captain Shaw to have applied a remedy so as to prevent a man at any station being on duty for so long as 106 consecutive hours, 5194——Expediency of arrangements whereby fire-escape men after a night's duty may be allowed to go to bed; necessity, however, of the men being on the spot, and ready to start for any serious fire at a moment's notice, 5197-5200——Important improvement since 1869 by the provision of lodgings for the men in the new stations, 5200-5203.

Suggestion that the strength of the brigade be so far increased as to admit of each man having twenty-four hours off duty every fortnight, 5204-5208. 5211——Opinion that the Board should not be restricted to a halfpenny rate, 5209——Conclusion also that the insurance offices should pay a very much larger contribution than they now pay, 5210——Facilities at Chelsea, Paddington, and certain other stations, for some of the men attending church on Sundays, 5212-5219.

Report, 1876—*continued.*

Thompson, Edward John. (Analysis of his Evidence.)—continued.

[Second Examination.]—Further information relative to the fire at Brooks' Wharf, and the necessity for engines even if there had been a plentiful supply of hydrants, 5220–5225——Calculation that one-half the property in the metropolis from which the rates are received is insured, instead of one-third as estimated by Captain Shaw, 5226——Large concentration of valuable goods in bonded warehouses, from the insurance of which goods the companies derive considerable receipts, whilst they contribute but little to their protection from fire, 5226. 5230, 5231. 5237–5244. 5342, 5343.

Conclusion that the insurance offices should contribute about 50 *l.* instead of 35 *l.* per million of insured property, 5226. 5342, 5343——Voluntary arrangement in the first instance as to the companies making contribution, Parliament having, however, sanctioned an enactment giving legal force to such arrangement, 5228–5236.

Initiative taken by the Fire Brigade Committee, at the proper time, in such matters as new stations, &c., though so large a financial question as that of a system of hydrants is dealt with by the Works and General Purposes Committee, 5247–5257——Check to the action of the Fire Brigade Committee in the recommendation of improvements owing to the chronic insufficiency of funds, 5249–5257——Inquiry by the Committee into the question of chemical appliances for fire extinction, 5251–5255——Action of the Committee in ordering certain patent respirators for the firemen, though Captain Shaw has not made use of them, *ib.*

Doubt whether the present strength of the brigade is above or below what was recommended by Captain Shaw in 1865; 5258–5270——Witness submits, however, that the Fire Brigade Committee have done all that was possible with the funds at their disposal to increase the efficiency of the brigade, 5260–5271——Provision of protection for life as well as property out of the funds originally granted for the latter purpose only, 5273, 5274.

Examination with further reference to the hours of duty of the men and the question of overwork; less onerous duties at the Kensington and other stations visited by witness than at the more central stations, 5275–5291. 5300, 5301. 5308–5311. 5358, 5359——Strict discipline exercised by Captain Shaw, witness suggesting that by some relaxation in this respect the men might obtain more rest, 5292–5299——Comment upon a letter received by witness, as Chairman of the Fire Brigade Committee, from a man named Wheeler, complaining of his treatment whilst in the brigade; good appointment obtained by Wheeler at Ipswich through his service in the brigade, 5302–5307.

Further statement in favour of the men getting one day's leave every fortnight, an increase of about sixty or seventy men being necessary for this purpose, 5308. 5312–5316. 5364–5366——Increase of not more than fifteen men required in order to provide a staff of fifty at the new central station, 5316, 5317——Question considered as to the number of men available at night for coping with great fires, should they occur; better resources for meeting such contingencies but for the want of funds, 5318–5331——Large number of engines and of men at the fire at Brooks' Wharf, without other districts being left quite unguarded, 5327–5330.

Readiness of the Metropolitan Board to carry out any work which they consider is for the interests of the metropolis without being deerred by the fear of any odium, 5333–5335——Reasons assigned for witness having based his superannuation scheme entirely upon the men's contributions; prompt withdrawal of the scheme upon the objection raised by the men, 5336, 5337——Approval generally of the police scheme as the basis of a scheme for the fire brigade, 5338–5341.

Grounds for the conclusion that there is no good reason for a direct representation of the insurance companies on the Fire Brigade Committee, though they should pay more towards the cost of the brigade, 5342–5346——Statement in justification of the removal of the station from Farringdon-street to Farringdon-road, 5346, 5347——Justification also of the removal of Wellclose-square Station, though it has been transferred to a point further from the docks, 5348, 5349. 5361, 5362.

Doubt as to the dock companies now maintaining engines for the protection not only of their buildings, but of the goods therein; charge of the halfpenny rate only on the buildings, 5350–5356——Reference to the salvage corps, supported entirely by the companies, as not assisting the brigade in fire extinction, 5357——Explanation relative to the closing of the stations at De Beauvoir Town and South Hackney; excellent stations provided elsewhere, 5360.

Opinion that the Board should not be limited as to the amount of the rate for fire prevention, though a three-farthing rate, with an increased contribution from the insurance, would be sufficient, 5363——Distinction further drawn between buildings and goods as regards liability for the cost of fire prevention, 5367–5374——Further argument that the insurance companies, as deriving very large receipts and profits from the premiums for insurance, should in fairness contribute more largely in respect of the protection of insured property, 5374–5382. 5390–5393.

Belief further expressed that nothing would be saved on the score of engines or men by putting down hydrants all over London, 5383. 5386——Authority of Sir Joseph Bazalgette

Report, 1876—*continued.*

Thompson, Edward John—continued.

Bazalgette for the conclusion that the necessary pressure cannot be obtained for an extensive system of hydrants, 5384——Intention to lay down hydrants in Northumberland-avenue, as well as along Shoreditch; prospect of magnificent buildings being erected in the avenue, 5386-5389.

Further statement as to Captain Shaw not allowing the men to wear respirators, though they were purchased without his raising any objection, 5394-5398. 5432-5440——Want of some additional stations, so that on this score, as well as in order to give more leave to the men, there should be an increase of staff, 5399-5405——Expediency of power to levy a penny rate, if the insurance offices and the Government do not pay increased contributions, 5408-5413.

Conclusion as to the valuable services rendered by the brigade to the companies, so that the latter should in equity make fair compensation, 5414-5428——Circumstance of there having been seventy-five men promoted during the last two years, the absence of a superannuation scheme not having retarded promotion, 5441-5444.

Tomkinson, Henry Richard. (Analysis of his Evidence.)—Is Managing Director of the Sun Fire Office, and is Chairman of the Fire Office Committee of the London Insurance Companies, 6684, 6685——Voluntary character of the contribution paid by the companies towards the cost of the fire brigade; there has never been any admission of the principle that the contribution was to be in proportion to the amount of protection afforded, 6686. 6688. 6692, 6693. 6717——Conclusion that the extinction of fires is an obligation which rests entirely with the local authority, and that the insurance offices should not be held liable to any tax for the purpose, 6686, 6687. 6690-6698.

Object of the brigade formally maintained by the companies to afford protection to particular classes of property, and not to protect the metropolis generally, 6689——Decided objection to any increase of the present rate of contribution, 6690-6693. 6719, 6720——Explanation that the special arrangement by which the offices in Liverpool and Manchester pay towards the cost of the local brigades affords no precedent for the principle of taxing insurance companies for fire extinction, 6694-6698.

Occurrence of some instances in which the London companies have considered that less protection was given by the Metropolitan Board than was formerly given by the companies' brigade, 6699——Interest of the Board to disperse the stations, whereas it was the interest of the companies to concentrate them where large masses of property were accumulated, 6700, 6701——Absence of any written undertaking on the part of the Board that the same protection would be given as formerly, though this was fully expected by the companies as a condition of their contribution, 6702, 6703.

Twofold reasons for objecting to a representation of the insurance offices at the Metropolitan Board, 6705-6707——Dissatisfaction of the companies in that their recommendations to the Board have not been adopted upon any important questions, 6708, 6709——Non-adoption of the representations made on the subject of steam-floats, 6710, 6711——Exception taken to any diversion of the companies' contribution to purposes not contemplated at the time of the transfer of the brigade, as for the protection of life, 6712, 6713.

Decided impolicy of any legislation which would establish the principle of the taxation of insurance companies for the extinction of fires, 6714-6717——Conclusion as to its being almost impossible to lay down any equitable basis for the taxation of the companies, 6718——Respects in which the present mode of contribution, at the rate of 35 *l.* for every million insured, is not equitable, *ib.* ——Objections to a contribution in proportion to the rate raised in the metropolis for the purposes of the fire brigade; preference for the present form of contribution, 6721-6725.

Insuperable difficulty of supplying a return showing the losses of the several companies in the metropolis since the transfer of the fire brigade to the Metropolitan Board, 6726——Grounds for strongly objecting to the principle adopted in Manchester and other towns, whereby the owners of property attacked with fire are liable for contribution to the local fire brigades, 6729-6734. 6738, 6739. 6742-6744——Illustration in the case of Huddersfield of the failure of a recent attempt to impose liability upon owners, 6730, 6731. 6733——Withdrawal of a clause in a Bradford local Bill which proposed to tax the insurance companies for fire extinction, 6734.

Obstacle to any return showing the relative amount of insurances paid upon movable property and upon buildings, 6735——Approval of the principle of immovable property being rated for fire extinction as for all other purposes, 6736, 6737——Security for reasonable insurance rates; competition in operation although upon certain classes of property the companies agree as to the rates to be charged, 6740, 6741.

Concurrence in the view that the protection of property from fire is a police question, and, as such, one which should not involve the taxation of insurance offices, 6745-6747——Reference to the management of a fire brigade as a function foreign to the proper business of an insurance company, 6748, 6749.

Report, 1876—*continued.*

Tomkinson, Henry Richard. (Analyis of his Evidence)—*continued.*

Evidence to the effect that during the last ten years there has been a distinct increase in the fire risk, though there may have been no increase of serious fires, 6750-6760——Increased chance of very destructive fires on account of the increase of large buildings, 6757——Increased risk owing to the increased application of machinery, 6760——Considerable increase since the introduction of petroleum and the use of explosive oil in lamps, *ib.*

Tooley-street Fire. Reference to the Tooley-street fire (before witness' time) as one at which the supply of water was said to be insufficient, *Captain Shaw* 1598–1601. 1622, 1623 —Loss of 130,000 *l.* by the Phœnix Company through the Tooley-street fire, *Lovell* 6441.

Tozer, Alfred. (Analysis of his Evidence).—Is Superintendent of the Manchester Fire Brigade; was in the London Brigade from 1851 to 1862; 6761-6764 —Management of the Manchester Brigade by the watch committee (which body also manages the police), there being one superintendent and fifty men, 6765, 6766. 6922, 6923——Total of sixteen stations, nine of which are also police stations, whilst at four of the stations the men reside, 6767. 6782-6786. 6885, 6886——Valuable assistance rendered by the police at fires; advantage in their being under the orders of the superintendent of the fire brigade, 6768, 6769. 6775. 6794, 6795. 6823-6825. 6918–6923.

Excellent pressure at Manchester, so that at very few fires are the engines required, the system of hydrants and of attaching hose being found very effectual, 6770-6778——Comparatively few serious fires, owing to the great facilities for checking them when they break out, 6773-6775. 6832, 6833. 6954-6956——Extinction of a considerable number of fires by means of small hand-pumps, 6775. 6828-6832.

Use of about 10,000 hydrants or fire-cocks in Manchester, and of about 7,000 in the suburbs, 6777, 6778——Services rendered by the Manchester brigade in the suburbs, 6779-6781——Facilities for taking the hose to fires; advantage in the fire-escapes being supplied with hose, and being on duty in the day as well as at night, 6787-6790.

Improvement in London if the police stations were also fire stations, and if the police, as being on the spot, were furnished with hose, &c., for immediate application; that is, if there were a constant water supply in London, 6794-6801. 6806, 6807——Advantage also of a fire station at every shelter provided for cabmen, 6796-6799——Particulars relative to the canvas hose used at Manchester; its advantages over leather hose, though not so durable, 6802-6805. 6858. 6896-6899.

Small cost of hydrants, as laid at Manchester; they are placed upon the mains direct without any connecting pipe, 6808-6812——Satisfactory operation of the Bateman Ball Valve, used at Manchester, 6813-6818. 6916, 6917——Average distance between the hydrants; they are closer together accordingly as the property is more valuable, 6819, 6820——Conclusion that constant pressure in London, with a system of hydrants, and with increased facilities for police assistance, would greatly diminish the number of bad fires, 6821-6833.

Much smaller staff in London than in Manchester in proportion to the area served in each case, 6834-6839——Information relative to the hours of duty of the Manchester brigade, and of the leave of absence allowed to the men; there are no complaints, 6840-6851. 6887-6891. 6906. 6909. 6924-6926——Satisfaction given by the superannuation now in force; particulars hereon, 6850, 6851. 6869–6871 (*App.* 683).

Increased staff required, and increased expense if the water supply at Manchester were intermittent, 6852-6854——Very rare occurrence of serious fires, owing to the facilities for their suppression, 6855-6857. 6954-6956——Information relative to the recruiting and drill in the brigade, labourers as well as sailors being enlisted; usefulness of the latter, though witness objects to their exclusive employment, 6859–6868. 6872. 6910-6915. 6927-6933.

Facilities for greatly increasing the pressure at Manchester there being four reservoirs, the mains from which can be used to assist each other in the event of fire, 6875-6882. 6900-6905. 6934-6949——Belief that there are very few private hydrants, 6892-6895. ——Charge made upon uninsured property for the services of the brigade; that is, where there is a *bonâ fide* service, 6950-6953——Arrangement also with the insurance offices, whereby the latter compound for the insured portion of the property, 6950.

Training. Evidence as to the great importance of sufficient inducements to the men, when properly trained, to remain in the brigade, and as to the much greater value of trained than untrained men, *Captain Shaw* 245–247. 716, 717. 900. 908, 909. 914. 916–926 —Numerous resignations of trained men, owing to the want of a superannuation scheme; total of 640 resignations since the transfer of the brigade to the Metropolitan Board, *ib.* 716, 717. 917, 918. 922–926.

Average cost of about 100 *l.* in order to give each man an efficient training; large sum represented by the loss of trained men, *Captain Shaw* 922–926——Data for the conclusion that a trained fireman is worth 100 *l.*, *ib.* 1387–1389.

Great

Training—continued.

Great exaggeration and inaccuracy in a statement by Captain Shaw that 600 men had left the brigade through the absence of a superannuation fund, whose trained services represented a cost or loss of 60,000 *l.*, *Freeman* 3993–4000. 4005. 4208. 4223—— Conclusion as to the entire inaccuracy of Captain Shaw's estimate as to each man costing on an average 100 *l.* for training, *ib.* 4561.

See also *Drill and Instruction.*

Travelling Expenses. Considerable payments for travelling and incidental expenses of firemen, *De la Hooke* 3788.

Turin. Satisfaction given by a scheme propounded by witness for the Turin fire brigade, *Harris* 7929–7932——Explanation that the fire brigade scheme propounded by witness for Turin had no reference to the police, *ib.* 8046–8048.

Turncocks (*Water Supply*). Necessary reliance of the fire brigade upon the companies' turncocks for obtaining supplies of water at fires, *Lushington* 24——Extent to which the companies' turncocks are depended upon for turning on the required supplies at fires, the firemen being able to draw the plugs for themselves only where the supply is constant, *Captain Shaw* 165-176. 190–192.

Occurrence of 285 cases of late attendance of turncocks, and of 222 cases of non attendance; explanation hereon that witness has no fault to find with the turncocks, *Captain Shaw* 168-176—— Late attendance of the turncocks in nineteen cases in 1875, whilst in nine cases there was no attendance, *ib.* 1080–1082.

Statement as to the water companies having frequently offered to pay for the housing of the turncocks at the fire brigade stations; obstacles to this arrangement, though it is very desirable that the turncocks should live within easy reach of the stations, *Captain Shaw* 1086–1094. 1303–1305 ——Doubt as to the advantage of informing the companies in each case of late attendance of the turncock, *ib.* 1095–1097——Approval of the name and address of the turncock being advertised on the street lamps, as is done by the St. George's vestry, *ib.* 1404–1409.

Facility in starting the plugs, and in obtaining water without the aid of the turncock; rare exceptions to this rule, the turncocks moreover being almost always at hand, *Port* 2023–2029. 2243–2246——Approval of the turncocks' address being advertised, *ib.* 2247, 2248.

Discontinuance by the Board of the practice of reporting to the water companies all cases of late attendance of turncocks, Captain Shaw having stated that the companies do all in their power to facilitate the work of the brigade, *De la Hooke* 3479-3481—— Limited advantage by the turncocks living near the fire brigade stations; obstacle to lodging them in the stations, *Richardson* 4802–4807.

Necessary employment of turncocks under a constant supply, in order to get sufficient head of water to bring to bear upon a fire, *Bramwell* 5899–5902. 5918–5926. 5941–5945 ——Instances of great delay at fires in obtaining the attendance of the turncocks, so that the insurance companies suggested (but in vain) that a turncock should be kept at each brigade station, *Lovell* 6347, 6348.

Suggestion for the training of some 500 policemen as turncocks, if there were a constant supply of water, so as to regulate the pressure at fires, *Harris* 7900–7906——Suggestion that policemen trained to act also as turncocks might have 1 *s.* a-week extra pay, *ib.* 7943, 7944.

Report by Captain Shaw, in June 1866, that on thirteen occasions during the year inconvenience had been sustained through the non-attendance of the regular turncocks, *App.* 667——Explanations by the several water companies in reply to the foregoing statement, *ib.* 667–672.

U.

Uninsured Property. Estimate of 1,200,000,000 *l.* as the value of the uninsured property in London, the insured property being 540,000,000 *l.*, *Captain Shaw* 1175–1178 ——Expediency of effectual protection against fire, whether property is insured or uninsured, *ib.* 1644.

Large proportion of uninsured property, the protection of which can only be provided for by means of a rate, *Richardson* 4656. 4666, 4667—— Necessity of a rate in order to reach the uninsured property, though witness submits that great inequality is involved, *ib.* 4964–4969. 5024-5026. 5098. 5111–5120.

Calculation that one-half the property in the metropolis from which rates are received is insured, instead of one-third as estimated by Captain Shaw, *Thompson* 5226.

Opinion that power is required in London to charge the owner of uninsured property which is attacked by fire, *Gunn* 5477. 5481. 5490–5498. 5510. 5553–5556—— Large

Report, 1876—*continued.*

Uninsured Property—continued.

proportion of uninsured property in London, which belongs to the poorer classes, and escapes charge for fire extinction, save under the halfpenny rate, *Gunn* 5480.

Result of an inquiry by witness, that four-fifths of the property in London attacked by fire is not insured, *Swanton* 7039, 7040. 7230, 7231.

United States. Large number of firemen, so called, in cities in America; these are not regularly trained, and follow other occupations as well, *Captain Shaw* 1753, 1754.

V.

Vestries. Satisfactory representation of the vestries at the Metropolitan Board upon the question of new stations, *Freeman* 4365, 4366——Interest of the parish representatives on the Board in obtaining stations for their own localities, *Lovell* 6322. 6324. 6420——Distinct interest of the companies as compared with that of the parishes having representatives at the Board, *ib.* 6514.

Volunteer Brigades. Several private engines in different parts of London which give assistance according to their ability, *Captain Shaw* 1179–1181——Services rendered by some volunteer brigades in the district, more especially by the South Metropolitan Brigade, *Hamlyn* 1860–1877——Objection by Captain Shaw to utilising the volunteer fire engines, *Freeman* 3990. 4120.

Vulliamy, Mr. Memorandum by the superintending architect of the Metropolitan Board, dated 29th June 1866, as to the means of providing fire-plugs in the metropolis, *App.* 663–665.

W.

Wages. See *Pay.*

Wandsworth. Report by Captain Shaw, in May 1868, relative to the manning of the Wandsworth Station, and the plant to be provided, *App.* 652.

Wapping. See *Water Supply*, 9.

Warehouses. Belief as to the Metropolitan Board having tried without success to pass a Bill for improving the construction of warehouses, *Lovell* 6656, 6657.

See also *Liverpool*, 7.

Watch Boxes (*Fire Escapes*). Reports by Captain Shaw, in May and October 1868, recommending the purchase of new watch boxes, *App.* 649.

WATER SUPPLY:

1. *Provisions in the Acts of* 1852 *and* 1871 *upon the Subject of a Constant Supply, and Powers of the Metropolitan Board in the Matter.*
2. *Extent of Districts under Constant Supply.*
3. *Testimony to the Advantages of the Constant System as compared with the Intermittent System; Facility in applying the former.*
4. *Great Waste of Water under the Intermittent System; Economy feasible under Constant Supply.*
5. *Explanations on the part of the Metropolitan Board as to the non-enforcement of a Constant Supply throughout London.*
6. *Immense Outlay required for New Fittings under a Constant Supply.*
7. *Report by Captain Shaw, in* 1866, *in favour of a Constant Supply at High Pressure; Objections on the part of the several Water Companies.*
8. *Question of Pressure in reference to Fires; Difficulties on this Score, even if a Constant Supply were in Operation.*
9. *Small Pipes and Low Pressure in Wapping and Rotherhithe.*
10. *Question of Separate Mains for Fire Extinction Purposes.*
11. *Question of a Re-arrangement of Pipeage, and of a connection between the Mains of the different Companies.*
12. *Requirements of Captain Shaw as to the Volume of Supply at Fires.*
13. *Exceptional Instances of Short Supply under the present System.*
14. *Testimony to the zealous co-operation of the Water Companies in the Work of Fire Extinction.*
15. *Advocacy of a Concentration of the Supply under the Metropolitan Board of Works; proposed Purchase of the Property of the Companies.*
16. *Other Details generally.*

1. *Provisions*

Report, 1876—*continued.*

WATER SUPPLY—continued.

1. *Provisions in the Acts of* 1852 *and* 1871 *upon the Subject of a Constant Supply, and Powers of the Metropolitan Board in the Matter:*

Provisions in the Metropolis Water Act of 1852, defining the area of the water companies, prohibiting the intake of water below Teddington Lock, and facilitating a constant supply; this Act did not refer to any local authority in the metropolis, *Lushington* 46-50——Explanations in connection with the provisions of the Act of 1871, upon the subject of a constant supply, the regulations as to the cost of fittings, &c., *ib.* 54-68.

Provision in the Metropolis Water Act of 1852 as to a constant supply being given upon the requisition of four-fifths of the owners and occupiers, *De la Hooke* 2846-2848——Power of the Metropolitan Board under the Act of 1871 to require the water companies to give a constant supply within four months after notice to that effect, *ib.* 2848, 2849.

Efforts of the Board to obtain legislation as favourable as possible for the public as against the companies, but only with partial success, *Richardson* 4489, 4490.

2. *Extent of Districts under Constant Supply:*

Large districts now under constant supply by each company; total of 2,140 miles of streets supplied by the companies, whilst there are 671 miles of pipes under constant pressure, *Captain Shaw* 181-189——Substantial accuracy of a certain map purporting to show the districts covered by constant supply, *De la Hooke* 3431-3433. 3460.

3. *Testimony to the Advantages of the Constant System as compared with the Intermittent System; Facility in applying the former:*

Great importance of a constant supply which may be turned on at once, independently of the turncocks, *Captain Shaw* 176-178——Conclusion that fires would be much more promptly and effectually dealt with if there were a constant supply all over the metropolis, the intermittent supply being attended with many difficulties, *ib.* 193-202——Reduced size of fires and reduced losses if there were a constant pressure system of water supply with local facilities for prompt use of appliances, *ib.* 1653, 1654, 1677-1680.

Means of giving a constant service in London, if it be given to a whole district at once, *Easton* 6156, 6157——Great importance attached to a constant supply in conjunction with a system of hydrants, *G. Shaw* 6196 *et seq.*; *Tozer* 6821-6833; *Swanton* 6971-6981. 7019-7032. 7046-7050; *Berrey* 7406-7416——The constant supply is doubtless better for hydrants, *Swanton* 7256.

Enormous advantage of a constant supply in reference to fires, *Berrey* 7365. 7373——Consultation of witness by all the large towns in the kingdom upon the question of introduction of the constant supply, *ib.* 7369, 7370——Conclusion as to the sufficiency of the present service pipes and house fittings in London for the continuous pressure under a constant supply, *ib.* 7411-7414. 7444-7446——Facility of a gradual adoption of the constant system in London, *ib.* 7415, 7416.

Much better protection from fire in towns where there is a constant pressure with hydrants than in London under the intermittent system, *Yelland* 7545——Great value attached to a constant supply of water in the metropolis at high pressure, and to a system of hydrants, *Harris* 7857-7860——Circumstance of witness not having considered the question of expense in advocating a constant water supply at high pressure with a system of hydrants, *ib.* 7998-8003.

Value attached by Captain Shaw in reports of June and July 1866 to the system of constant supply with reference to fire prevention, *App.* 665-667——Objections raised by Captain Shaw in these reports to the intermittent system, *ib.*

4. *Great Waste of Water under the Intermittent System; Economy feasible under Constant Supply:*

Opinion that as regards the question of waste it is true economy to have a constant service, *Captain Shaw* 1651——Valuable operation of the waste water meter as a check in connection with the constant supply, *Bramwell* 5980-5986——Great waste of water at fires under the present system, *Swanton* 6979-6981; *Yelland* 7545——Very large cost represented by the water wasted at fires, *Swanton* 7257, 7258.

Conviction of witness that a large waste of water under the intermittent system in London might be saved by applying the constant system, accompanied with an efficient inspection of fittings, *Berrey* 7410. 7415. 7420.

5. *Explanations on the part of the Metropolitan Board as to the non-enforcement of a Constant Supply throughout London:*

Summary of the reasons why the Board have not initiated any measure for a constant supply under the Act of 1871, though the Select Committee on the Bill and other committees and commissions have reported in favour of such supply, *De la Hooke* 2835-2861——The Board have not decided not to avail themselves of a constant supply, *ib.* 2885.

Report, 1876—*continued.*

WATER SUPPLY—continued.

5. *Explanations on the part of the Metropolitan Board, &c.*—continued.

Further explanation that the Board have not decided not to avail themselves of a constant supply, though they have decided not to put down hydrants throughout the metropolis, *De la Hooke* 3272, 3273——Inability of witness to give the definite interpretation placed upon the term "constant service" by the Fire Brigade Committee, *ib.* 3428-3430——Cognisance of the Board as to the companies generally having each of them a large mileage under constant supply, *ib.* 3469-3473.

Strong conviction of witness that unless the entire charge of the water supply be placed in the central authority a satisfactory constant service at high pressure cannot be obtained for the more efficient working of the fire brigade, *Richardson* 4672 *et seq.*——Exceedingly large outlay required in order to utilise a constant service for fire protection and for domestic supply, the Metropolitan Board not feeling justified in initiating such expenditure, *ib.* 4886-4895.

6. *Immense Outlay required for New Fittings under a Constant Supply:*

Objection of the Metropolitan Board to incur the public odium entailed by requiring the water companies to give a constant supply, inasmuch as this would necessitate an enormous outlay by owners and occupiers for new fittings, &c., *Richardson* 4886-4895——Immense outlay involved in an alteration of the fittings all over London so as to adapt them to a constant supply, *Bramwell* 5974-5986.

7. *Report by Captain Shaw, in* 1866, *in favour of a Constant Supply at High Pressure; Objections on the part of the several Water Companies:*

Quotation of a report by Captain Shaw in 1866 in condemnation of the intermittent system and in favour of a constant supply at a height of not less than 300 feet above high-water mark, such supply to be by gravitation alone, *Richardson* 4718-4723——Circulation of Captain Shaw's report of 1866 among the water companies by whom the difficulties or impossibilities of a constant high pressure, by gravitation, were fully pointed out, *ib.* 4724-4727.

Objections submitted, in detail, by the several companies in 1866 to a constant supply throughout the metropolis, *App.* 667-672.

8. *Question of Pressure in reference to Fires; Difficulties on this Score, even if a Constant Supply were in Operation:*

Advantage of a pressure by gravitation equal to about 300 feet above high-water mark; question as to the effect upon the pipes and mains, *Captain Shaw* 1563-1568.

Summary of the result of numerous observations taken by witness, on the part of the Metropolitan Board, in order to ascertain the pressure in the water mains in different parts of the metropolis, *Sir J. W. Bazalgette* 5577, 5578——Average of thirty lbs. of pressure, each pound of pressure representing a head of 2·3 feet, *ib.* 5578-5581. 5785——Statement of the varying pressures in the districts of the several companies, *ib.* 5582.

Explanation that the pressure is affected by the quantity of water being drawn from the pipes at the time by the distance from the reservoir, and by the size of the pipes, *Sir J. W. Bazalgette* 5583-5591. 5678-5684—— Illustration of the effect of distance in diminishing and exhausting the pressure in the case of pipes of different sizes, *ib.* 5626-5630.

Insufficiency of a constant supply to admit of turncocks being dispensed with, unless there be also high pressure; belief as to the impracticability of securing such pressure under the present conditions in London, *Sir J. W. Bazalgette* 5666-5684——Instances of lower pressure at night than in the day time, *ib.* 5761-5767——Low pressure generally in London, so that with a hose 200 feet long the water would hardly rise above the surface, *ib.* 5781, 5782——Very high pressure to be attained before hose will burst, *ib.* 5798-5801.

Exception taken to a statement by Captain Shaw in favour of a constant supply by gravitation, at a height of 300 feet above high-water mark, *Sir J. W. Bazalgette* 5806, 5807——Absence of any such pressure in London as will throw water to a height of 200 feet, as desired by Captain Shaw, *ib.* 5813.

Experiments made by witness on the subject of the pressure given by the different water companies in their mains in the metropolis, *Bramwell* 5820-5822——Fallacy in supposing that constant pressure means high pressure, *ib.* 5823.

Particulars relative to the conditions in the Acts of the London water companies generally (other than the East London and New River Companies) as to the level at which they are to supply: conclusion as to there being no stipulated pressure above the pavement, *Bramwell* 5833-5843. 5854—— Great variation in the height, from zero upwards, at which the companies may supply, *ib.* 5833-5835. 5841-5843 ——Facility of ascertaining the areas under different levels of supply, *ib.* 5843, 5844. 5849-5851.

Necessity of applying to the engineers of the different companies for any information that may be required as to the actual amount of pressure given, *Bramwell* 5846-5848 ——Probability

Report, 1876—*continued.*

WATER SUPPLY—continued.

8. *Question of Pressure in reference to Fires; &c.*—continued.

——Probability of the companies' pressure not being much in excess of their statutory obligation over their whole districts, though to some extent they raise water to a higher level than is compulsory in order to meet their customers' work, *Bramwell* 5852–5854.

Explanation that whatever the pressures which the companies are bound to give, such pressures are for domestic supply, and not for fire service, *Bramwell* 5854——Immense increase of pressure required over and above the relative increase in the quantity delivered per minute, *ib.* 5864, 5865——Illustration of the enormous influence of the friction through pipes in diminishing the statutory pressure, *ib.* 5864, 5865.

Reference to a statement by Captain Shaw as to the firemen never trusting to the pressure in the pipes to do the required work in the earlier stages of fires, *Bramwell* 5890–5893——Extra height to which the water must be pumped in order to obtain an adequate pressure; increased expense thereby to the water companies, if they are to be called upon to bear it, *ib.* 5898——Necessity for turncocks under a constant supply as well as under an intermittent supply, even with the use of hydrants; that is, so long as there are small pipes and low pressure, *ib.* 5918–5926. 5941–5945.

Conclusive character of the experiments before alluded to in proof of the great decrease of pressure through friction in the pipes, *Bramwell* 5928–5930——Belief as to the companies giving more than the statutory pressure in some districts, in order to supply customers at a higher level, for the sake of profit, *ib.* 5931–5933. 5964–5968.

Confirmation of Mr. Bramwell's evidence as to the statutory pressure of the different water companies, *Easton* 6010, 6011——Necessity in the first instance of constant high pressure, in order to efficiently work a system of hydrants, and to bring in the aid of the police, *ib.* 6063, 6064. 6071, 6072. 6088——Opinion that it would be as feasible to provide high reservoirs and a constant supply at high pressure in London, as it is at Brighton, *ib.* 6114–6117. 6151, 6152. 6161–6164.

Large increase of pressure given by the companies in the last ten years, *Swanton* 7046——Exceptional instances, as at Rotherhithe and Bermondsey, of the pressure being altogether inadequate for the purposes of the brigade, *ib.* 7182–7186——Consideration of the effect of the friction in a given length of hose in reducing the pressure, *ib.* 7237–7247.

Great pressure obtainable where there are 20-inch mains, without turning off the domestic supply; several miles of such mains in London, *Swanton* 7249–7252——Dissent from a certain statement by Mr. Lovell as to a continuous supply being calculated to reduce the pressure in the mains much below its present point, *ib.* 7253–7256——Better pressure given by the companies than is required of them under their Acts, *ib.* 7338–7340——Great variation of pressure at different hours of the day, and according to the size of the mains, *ib.* 7343–7351.

Report by Sir J. W. Bazalgette, dated 1st February 1876, relative to the pressure in the mains and pipes of the different companies, *App.* 654, 655——Tabular statement showing the pressures, arranged with reference to the altitudes of the several places above Ordnance datum, *ib.* 655, 656.

9. *Small Pipes and Low Pressure in Wapping and Rotherhithe:*

Evidence showing that with the present pressure and the small pipes in certain waterside districts, as in Wapping and Rotherhithe, a sufficient supply of water could not be obtained so as to enable the engines to cope with large fires, *Sir J. W. Bazalgette* 5631–5642.

Statement in further explanation of the low pressure and deficient supply in Wapping, in the East London Company's district, *Sir J. W. Bazalgette* 5759, 5760. 5768–5771. 5786–5792.

10. *Question of separate Mains for Fire Extinction Purposes:*

Advantages of the plan proposed by witness' father for laying down a separate set of fire mains in London for giving a constant supply on high pressure; cost of 3,000,000*l.* and upwards involved in this scheme, *Easton* 6040, 6041. 6049–6055. 6156.

Useless expenditure in building reservoirs and laying mains expressly for fire purposes, the present mains supplying all that is necessary, *Swanton* 7051–7053.

11. *Question of a Re-arrangement of Pipeage, and of a Connection between the Mains of the different Companies:*

Action of the Metropolitan Board in December 1871, in accordance with the views of Captain Shaw, adverse to the proposal of the insurance companies, relative to a connection between the mains of the several water companies, *De la Hooke* 2926–2931——Explanation in reference to a statement by Captain Shaw, in the foregoing matter, that the Board seemed unwilling that he should place himself in direct communication with

WATER SUPPLY—continued.

11. *Question of a Re-arrangement of Pipeage, &c.*—continued.

the water companies; no communication was made to the companies by the Board, *De la Hooke* 2927-2931. 2934–2938.

Heavy cost involved in a re-arrangement of the pipeage with reference to fires, whilst the water companies should hardly be asked to bear any portion of the charge, their duty being to supply water for domestic purposes, *Bramwell* 5896——Advantage of a separate system of pipes for the purposes of fires, or else of a general revision of the pipeage, *ib.* 5898. 5912-5915. 5927——Advantage of pipeage arrangements, whereby the whole supply of the different companies could be brought to bear upon the same fire, *ib.* 5909——Impracticability, save by means of legislation, of a combination between all the companies with a view to a concentration of supply in case of fires, *ib.* 5938–5940.

Great difficulty and expense of any joint working of the mains of the eight different companies in London, the pressure varying in each case, *Easton* 6027——Failure of representations made to the Metropolitan Board with a view to a junction of the mains of the different water companies, *Lovell* 6343–6346.

Grounds for the suggestion that adjoining water companies should be required to unite their mains for public purposes, *Swanton* 7041–7044——Anxiety evinced by the companies to improve the supply for fires, witness seeing no advantage in an amalgamation of the eight companies, though there might be junctions between their mains at certain points, *ib.* 7179–7182——Modified pressure to be obtained by coupling a main having seventy feet of pressure with one having forty feet, *ib.* 7259-7261. 7342——Cases of emergency in which the mains of different companies should be connected, *ib.* 7260. 7341. 7353.

Report by Captain Shaw, under date 16th December 1871, upon the question of connection of the mains of the several companies, *App.* 640.

Correspondence between the London Salvage Corps and the Metropolitan Board in 1871–72, upon the question of connecting the mains of adjacent companies, *App.* 680–682. 684.

12. *Requirements of Captain Shaw as to the Volume of Supply at Fires:*

Requirement of a supply of 2,000 gallons a minute, ready for immediate delivery within such distance as fourteen engines can work on a fire, using not more than half a mile of hose, *Captain Shaw* 203. 206–210.

Explanation that in asking for an available water supply of 1,000 gallons a minute, witness has not considered whether this would not involve an enormous cost, *Captain Shaw* 1410–1416.

Calculation that a supply of 2,000 gallons a minute, as stated by Captain Shaw to be required in certain cases for fires, is equal to one-forty-second of the whole supply of the eight companies in the month of May last, *Bramwell* 5854–5863.

13. *Exceptional Instances of short Supply under the present System:*

Occurrence of seventy-nine cases of short supply of water since 1st January 1866, *Captain Shaw* 168, 169——Important improvement in the water supply of London since 1867, *ib.* 1077——Total of thirty-two cases in 1875 in which the water arrangements were unsatisfactory, *ib.* 1080——Instances in Bermondsey and Rotherhithe of defective water supply under the intermittent system, *ib.* 1147–1150.

Small loss of property in 1875 by reason of short supply of water in four instances, *Captain Shaw* 1412–1414. 1417——Accuracy of a statement by witness in 1862, that a want of water had been experienced in only two instances out of about 600 fires, *ib.* 1538–1541.

Several instances of unsatisfactory water supply at fires in witness' district, *Hamlyn* 1853–1859——Satisfactory supply of water at fires in the Kennington district during the last year or so, *Port* 2020–2022——Full supply of water for the floats; doubt whether this equally applies to the land engines, *Kelly* 2588-2594.

Increased insurance rates charged for riverside property on account of the deficient water supply, *Lovell* 6445——Ample supply of water if it could only be properly used, *Swanton* 7178——Occasional deficiency of water at fires, this being the only complaint heard by witness, *Henderson* 7834, 7835.

Report by Captain Shaw in June 1866, that on thirteen occasions in that year inconvenience had been sustained in finding water at fires, *App.* 667——Explanations by the several companies in reply to the foregoing statement, *ib.* 667–672.

Zealous

Report, 1876—*continued.*

WATER SUPPLY—continued.

14. *Testimony to the zealous Co-operation of the Water Companies in the Work of Fire Extinction:*

Zealous efforts of the water companies as to the supply of water for fires, not only previously to 1867, but down to the present time, *Captain Shaw* 1542——Every possible assistance is given by the companies, so far as their means permit, *ib.* 1635, 1636.

Explanation that witness finds no fault with the water companies as to the pressure, &c.; they are doing all that can be fairly expected of them, *Freeman* 4382——Complaint as to the companies not giving a constant supply for domestic purposes, but not as to the character of their supply for purposes of fires, *Bramwell* 5957. 5969-5973.

Doubt as to the advantage of the companies being amalgamated in reference to fires, as they now do their best for the purpose of fire suppression, *Swanton* 7045. 7048.

15. *Advocacy of a Concentration of the Supply under the Metropolitan Board of Works; proposed Purchase of the Property of the Companies:*

Opinion that as regards the water supply, joint-stock companies cannot be properly called upon to do what is required for the protection of life and property, *Richardson* 4741——Conclusion, moreover, that London with its immense population should not be supplied with water by joint stock companies, and that if the supply were concentrated in the Metropolitan Board, satisfactory arrangements as to pressure, &c., would in a few years be provided, *ib.* 4741–4744——Illustrations at Manchester and Liverpool of the public advantage through the water supply being in the hands of the corporation; satisfactory pressure obtained, *ib.* 4742, 4743.

Increased facilities to be secured by placing the water supply under the same management as the fire brigade, *Sir J. W. Bazalgette* 5674–5676——Serious expense apprehended by an amalgamation and purchase of all the water companies, *G. Shaw* 6249, 6250.

Difficulties owing to there being eight different water companies supplying at different pressures, *Berrey* 7408——Great economy of water and of working if the companies would agree to sell their undertakings to the municipal authority, so that they might be under one management, *ib.* 7408–7410. 7421, 7422.

16. *Other Details generally:*

Obligation upon the companies to supply the Board with underground plans of their mains, showing where there the screw-cocks are placed, *Lushington* 24——Reliance placed on the companies' turncocks for affording the required supplies, *Lushington* 24; *Captain Shaw* 165–179. 190–192.

Statement of the number of houses and of inhabitants comprised in the area supplied by each of the eight water companies, *Captain Shaw* 163——Very small diameter of the pipes in many districts, so that they could not deliver the quantity reqired for fires, *ib.* 211, 212——Difficulty as to the firemen obtaining supplies of water, through not being acquainted with the arrangement of the pipes, *ib.* 1083–1085——Cognisance generally of the men as to the position of the mains, *ib.* 1190–1192.

Obligation upon the water companies to supply water gratuitously for the use of the brigade, *Captain Shaw* 1193, 1194—— Opportunity of large owners of property to secure a constant supply by means of sealed cocks directly from the main, *ib.* 1419–1421.

Facility generally in starting the plugs and in obtaining supplies of water without the aid of the turncocks, who are however almost always in attendance, *Port* 2023–2029. 2243–2246——Entire insufficiency of a three-inch pipe for the supply of water at a fire, *Sir J. W. Bazalgette* 5776, 5777——Comment upon a former proposal by the companies that if there were a constant supply there should be an overflow pipe in each house, *Bramwell* 5971, 5972.

Map of London setting out the boundaries of the several water companies, *App.* 60.

See also *Brighton. City of London*, 2. *East London Waterworks Company. Fire Plugs. Hydrants. Kent Waterworks Company. Liverpool*, 2. *Mains. Manchester*, 2. *New River Company. Southwark. Stand-pipes. Turncocks.*

Waterloo-road Station (*Fire Brigade*). Objection made by Captain Shaw, in December 1870, to the closing of the Waterloo-road station; this station was not closed till 1872, and was re-opened in 1875, *De la Hooke* 3493–3501.

Closing of the Waterloo-road station further adverted to as having been in force from May 1872 till November 1875; use eventually made of the station for workshops, whilst since April 1876 an engine has been placed there, *De la Hooke* 3645–3651.

Abolition temporarily of Waterloo-road station, *Lovell* 6325, 6326——Probability of the closing of the station not having caused much alarm among the insurances offices, *ib.* 6561–6569.

Watling-street Station. See *Central Station*, 1.

Report, 1876—*continued.*

Wellclose-square Station. Explanation in reference to the closing of the Wellclose-square station, near the docks, and of a station in Whitechapel, a new station having been provided near the latter; doubt as to any loss of facilities on the whole, *Captain Shaw* 594-607——Opinion that on the whole the docks are as well protected as they were before the removal of the Wellclose-square station to the Commercial-road, *ib.* 1124-1131. 1356, 1357——Failure of an attempt to procure a site near the docks for the station removed from Wellclose-square, *ib.* 1353-1355.

Justification of the removal of Wellclose-square station, though it has been transferred to a point farther from the docks, *Thompson* 5348, 5349. 5361, 5362.

Grounds for complaint in reference to the removal of Wellclose-square station to the Commercial-road, *Lovell* 6325-6328, 6394.

Examination with further reference to the grounds of witness' objection to the removal of the Wellclose-square station to the Commercial-road, *Lovell* 6570-6595.

Grounds for objecting to the removal of the station from Wellclose-square to the Commercial-road; that is, by reason of the proximity of the former to the docks, *Swanton* 7079-7082. 7319-7329.

Wells-street (*Oxford-street*). Reference to the closing of the fire-bridge station in Wells-street, Oxford-street, as having been decided upon by the advice of Captain Shaw before the transfer of the brigade to the Board, *De la Hooke* 2901, 2902. 2904.

Complaint relative to the removal of the former station at Wells-street, and at Crown-street, Soho; subsequent occurrence of sixteen fires in this district, which would have resulted in but slight damages if the stations had not been removed, *Swanton* 7082-7095. 7299-7308.

West Middlesex Waterworks Company. Explanations and suggestions on the part of the company in 1866 upon the questions of the water supply in reference to fires; objections to a constant supply at high pressure throughout the whole district, *App.* 670, 671.

Wheeler, ——. Comment upon a letter received by witness as chairman of the Fire Brigade Committe, from a named Wheeler, complaining of his treatment whilst in the brigade; good appointment obtained by Wheeler at Ipswich through his service in the brigade, *Thompson* 5302-5307.

Whitecross-street Station. Total of nine men at the station, there being one steam engine and one manual, *Bull* 2387. 2390——Practice of witness to take, if possible, five men with him to a fire, leaving only one in the station, *ib.* 2391-2395. 2467.

Widows and Children (*Deceased Fireman*). Proposal by the men, in which witness concurs, that in cases of loss of life whilst on duty, children under the age of fourteen, as well as widows, should be provided for, *Captain Shaw* 863-868.——*See* also *Ford, Widow.*

Wittwer, George. (Analysis of his Evidence.)—Service of witness in the brigade for about two-and-a-half years as a fourth-class fireman, and about the same time in the third class, 2764-2767——Confirmation of the evidence of Captain Shaw and other witnesses as to the satisfaction to be given in the brigade by the superannuation scheme advocated by them, 2769-2772——Complaint among the men as to the excessive hours of duty, 2773-2775——Satisfaction generally with the rate of wages, if only there were a right to a pension, 2776-2779.

Duty of witness to attend to a fire escape every alternate night; he has never had any opportunity of saving life, 2780-2784——Loss of eight lives at a fire in Lambeth after the fire escape had come off duty for the night, 2785-2791——Opportunity of the men in charge of the escapes for getting some sleep in the watch boxes, 2792 2795.

Woolwich. Total of only four men at Woolwich, there being only one station and one fire escape, *Hamlyn* 1843-1852——Statement as to Woolwich station having been closed on the occasion of the engine having gone to a fire at East Wickham, and as to the want of means for coping with another fire if one had occurred at Woolwich at the same time, *Port* 2038-2063. 2149-2157.

Evidence purporting to show that during the temporary closing of the station at Woolwich, through the absence of all the available men at a fire, there was but a nominal risk incurred; exceedingly few fires in the district, *Richardson* 4630-4640. 4838-4841.

Jealousy on the part of the fire brigade when their services are required at Woolwich, where the dockyard police are trained as firemen, *Harris* 7924——Grounds for the statement that jealousy and want of co-operation have been experienced on several occasions at Woolwich as between the dockyard police and the fire brigade, *ib.* 7991-7997.

Workshops. Want of a workshop at head-quarters, whereas this is not feasible in Watling-street, *Captain Shaw* 583.

Report by Captain Shaw in April 1872, recommending that the workshops should be attached to the central station, and that the latter should be on the water-side, *De la Hooke*

Report, 1876—*continued.*

Workshops—continued.

Hooke 3189, 3190——Captain Shaw has always been of opinion that the workshops should be attached to the central station, *ib.* 3190——Prospect of a site being fixed upon where the workshops can be combined with the central station, *ib.* 3206. 3208, 3209——Situation of the present workshops in the Waterloo-road, *ib.* 3220–3222.

Exceptions taken to the employment of brigade men in the workshops for the execution of repairs, though Captain Shaw has been allowed to have his own way in the matter, *Freeman* 4020–4023.

Reports by Captain Shaw under date 23rd October 1868, 13th February 1872, and 15th April 1872, containing suggestions as to the improved accommodation required for workshops, *App.* 622, 623.

Y.

Yelland, Richard Collins. (Analysis of his Evidence.)—Is in charge of the Liverpool Salvage Brigade, 7464—— Direct connection between the fire brigade at Liverpool and the police, 180 of the latter being selected and drilled for the purposes of the brigade; way in which these are distributed at the fire stations and throughout the town, 7466–7470. 7499–7508——Appliances kept at the several stations for prompt use in case of fire, there being a constant supply of water in the mains, with hydrants attached, 7470–7475——Use of steam fire engines only in case of very large fires, the hydrants with hose applied being found sufficient in the great majority of cases, 7476–7483.

Particulars relative to the pressure in the mains at Liverpool, this varying in different parts of the town according to the height; means of increasing the pressure in case of fire, 7479. 7483. 7491–7498——Acquaintance of the firemen with the water supply arrangements, so that they can turn on the water, a turncock being rarely required save for increasing the pressure in the upper parts of the town, 7486–7492——Extra pay of 2 *s.* per week of the fire-brigade men as compared with the police; popularity and efficiency of the brigade, 7509–7512. 7572.

Operation of the salvage corps in Liverpool on the part of the insurance companies; voluntary contribution of 650 *l.* a-year by the companies towards the expense of the fire brigade, in return for which they have the use of engines and appliances for salvage purposes, 7513–7520——Charge made upon the owners when firemen are left in care of uninsured property after a fire; charge upon the county for services outside the borough, 7521–7523——Prompt attendance at fires, the hose and reel stations being close to the warehouses and docks, and being speedily at work, so that large fires are comparatively few, 7524–7531.

Information relative to the total number of fires and of damages in 1873, 1874, and 1875; increase from 312 fires in 1873 to 397 in 1875; 7530–7538. 7694–7698——Use of the ordinary screw hydrant at Liverpool, the cost being about 3 *l.* or 4 *l.*; they are frequently examined, and never get out of order, 7539–7544——Much better protection from fire in towns where there is constant pressure with hydrants, than in London under the intermittent system, 7545——Great waste of water at fires in London, *ib.*

Inability of witness to supply details as to the cost of the Liverpool brigade and of the stations, &c., 7547–7550. 7627–7632——Number of stations in proportion to the area; advantage in this respect as compared with London, 7551–7557——Responsibility of the Liverpool brigade to the head of the police, who is responsible to the watch committee, 7558. 7699–7701—— Use of ladders and of a few fire escapes by the police, 7560–7562 —— Hours of duty of the men in the salvage corps and in the brigade; allowance of one day's leave in the week to each of witness' men, 7563, 7564. 7567–7569. 7649, 7650. 7702.

Rate of pay in the police, 2 *s.* a week extra being given to men selected for the fire brigade, 7565, 7566. 7703, 7704 —— System of superannuation in the brigade as part of the police, 7570, 7571. 7623. 7708–7710——Former purchase of the water supply by the corporation from water companies; belief that there was no difficulty in buying them out, 7573–7577 ——Doubt as to more than seventy or eighty men being ever employed at one fire, the rest of the force being available for the town generally, 7578–7581 —— Impression that not more than two steam fire engines have been at work at any fire in addition to the hydrants and hose, 7582–7584.

Information as to the height or level of the Kensington reservoir at Liverpool, and as to the pressure in the mains, the supply being by gravitation, 7585, 7586. 7654–7663. 7711–7716—— Training of policemen for fire-brigade duties; efficiency attained, those who have been sailors being preferred, 7587. 7644–7648——Explanation that fires are not classed as serious in all cases of loss of life, 7589–7594——Circumstance of there being no steam floats at Liverpool; suggestions as to the kind of vessels desirable, 7595, 7596. 7614–7622. 7669, 7670.

Similar functions of the salvage corps in Liverpool as in London; payment of the

Report, 1876—*continued.*

Yelland, Richard Thomas. (Analysis of his Evidence)—*continued.*

expense by the insurance companies, 7597-7604——Extent to which witness is consulted as to the establishment of new stations, &c., 7605-7611. 7671-7674——Cost of from 2,200 *l.* to 2,600 *l.* a year incurred by the corps; large value of property sometimes saved, 7612, 7613——Further information as to the division of police and fire duties among the fire brigade, and as to the number of men who might be withdrawn from the police at any time, for fires, 7633-7643.

Large number of auxiliaries sometimes employed under witness and the thirteen men forming the salvage corps, 7649-7653——Importance of some engines in addition to the hydrants; necessity of a large increase of stations and of engines, if there were not constant high pressure and a system of hydrants, 7664-7668——Arrival of the brigade at any fire in about five minutes after receiving the call, 7678-7682——Very rare use of an engine, though one is always sent, 7683, 7684.

Supply of water partly by pumping and partly by gravitation, there very seldom being a want of pressure, 7685-7693——Doubt as to fire-brigade men being fully efficient up to fifty years of age, 7705-7707——Value of hydrants, even though the pressure may not be so strong as at Liverpool, 7716——Particulars relative to the use of steam fire engines, and of hydrants, respectively, at the landing-stage fire in Liverpool, 7717-7729.